Illinois
Environmental
Protection Agency

Bureau of Air
1021 N. Grand Ave., East
P.O. Box 19276
Springfield, IL 62794-9276

June 2000

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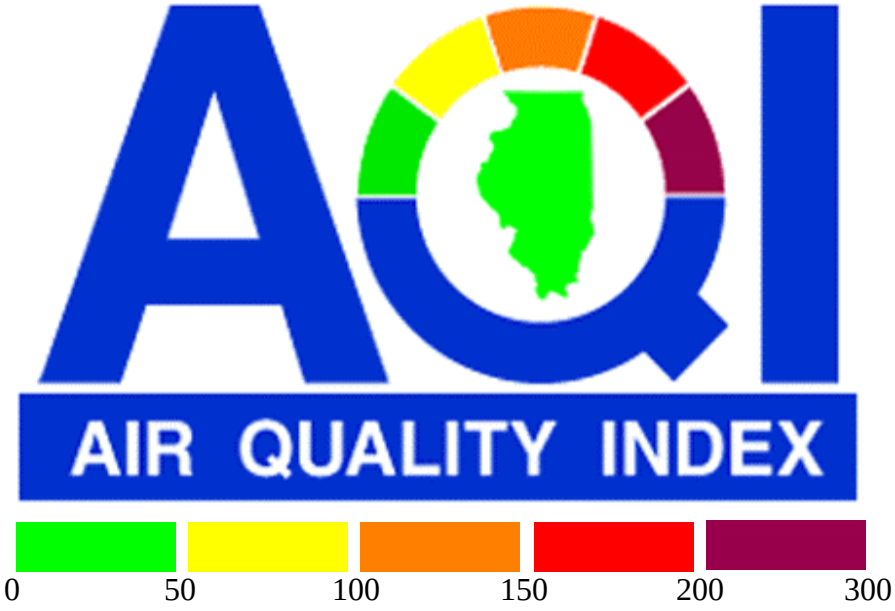

Illinois Annual Air Quality Report 1999

Illinois Environmental Protection Agency
Bureau of Air

Cover: The cover depicts the new Air Quality Index (AQI) which will be utilized in Illinois starting January 1, 2000. The new list of categories, numerical ranges, and corresponding colors is provided below.

Good: 0 - 50, Green
Moderate: 51 - 100, Yellow
Unhealthy for Sensitive Groups: 101 - 150, Orange
Unhealthy: 151 - 200, Red
Very Unhealthy: 201 - 300, Purple
Hazardous(not shown): 301 - 500, Maroon

ILLINOIS ANNUAL AIR QUALITY REPORT 1999

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To Obtain Additional Information

For additional information on air pollution, please call 217-782-7326, or write to:

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Illinois EPA Bureau of Air personnel contributed their time and expertise to the development of this publication.

A MESSAGE FROM THE DIRECTOR

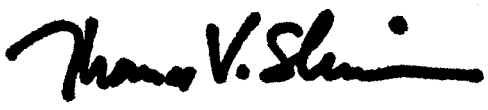
Since 1970, the Clean Air Program at the Illinois Environmental Protection Agency (EPA) has been working to combat air pollution. To comply with the federal Clean Air Act and its amendments, the Agency issues permits to air pollution sources and works to reduce air pollutants. Clean air efforts have progressed to creating partnerships that encourage both voluntary pollution-reducing activities and that promote preventing pollution before it starts.

Our remaining major air pollution problem affects a substantial portion of Illinois' population. Both the Chicago and East St. Louis metropolitan regions still do not meet the federal air quality standard for ozone (smog), which is associated with human respiratory problems as well as ecosystem damage. There were six occurrences of unhealthful air quality in one or more portions of Illinois during 1999--all due to ozone—compared with eight in 1998 and six in 1997. This was the first year since 1993 that there were no unhealthy ozone occurrences in the Chicago Metropolitan area.

Although this document shows that the trend in Illinois air pollution has been a steady decrease in emissions, there is still much to do to ensure that our residents enjoy the best air quality possible. Recent efforts to combat ozone include asking residents and businesses in the Chicago ozone non-attainment areas for help by voluntarily altering their activities that contribute to ozone formation on Ozone Action Days.

This 29th Annual Air Quality Report highlights information obtained in 1999 from the Bureau of Air's statewide air monitoring network, which incorporates more than 200 monitors that track the measurements of a variety of pollutants and air toxic compounds.

We hope you find this report helpful. We welcome any comments or questions you may have so that we can better address your information needs.



Thomas V. Skinner
Director

Illinois Annual Air Quality Report 1999

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EXECUTIVE SUMMARY

This report presents a summary of air quality data collected throughout the State of Illinois during the calendar year - 1999. Data is presented for the six criteria pollutants (those for which air quality standards have been developed - particulate matter (PM_{10} and $PM_{2.5}$), ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and lead) along with some heavy metals, nitrates, sulfates, and volatile organic compounds. Monitoring was conducted at over 100 different site locations collecting data from more than 200 instruments.

In terms of the Pollutant Standards Index (PSI) air quality during 1999 was either good or moderate more than 99% of the time throughout Illinois. There were four days Statewide which exceeded an air quality standard for any pollutant – all four for ozone. These exceedances occurred in Jersey (3), and Madison (1) Counties (ozone). Air quality trends for the criteria pollutants are continuing to show downward trends or stable trends well below the level of the standards.

In 1999 monitoring was initiated for $PM_{2.5}$ using Federal Reference Method (FRM) monitors at 25 locations Statewide as the first phase of fine particulate (less than 2.5 microns) sampling. The rest of this network will be implemented in 2000.

Stationary point source emission data has again been included. The data in the report reflects information contained in the Emission Inventory System (EIS) as of December 31, 1999. Emission estimates are for the calendar year 1999 and are for the pollutants: particulate matter, volatile organic material, sulfur dioxide, nitrogen oxides and carbon monoxide. Emission trends of these pollutants has been given for the years 1981 to the present. Emissions reported with the Annual Emissions Report have been provided starting with 1992. In general there has been a trend toward decreasing emissions over this time period.

SECTION 1: AIR POLLUTANTS: SOURCES, HEALTH AND WELFARE EFFECTS

Ozone (O_3)

Photochemical oxidants result from a complex series of atmospheric reactions initiated by sunlight. When reactive (non-methane) hydrocarbons and nitrogen oxides accumulate in the atmosphere and are exposed to the ultraviolet component of sunlight, the formation of new compounds, including ozone and peroxyacetylnitrate, takes place.

Absorption of ultraviolet light energy by nitrogen dioxide results in its dissociation into nitric oxide and an oxygen atom. The oxygen atoms, for the most part, react with atmospheric molecular oxygen (O_2) to form ozone (O_3). In general, nitric oxide will react with ozone to re-form nitrogen dioxide, completing the cycle. A build-up of ozone above the equilibrium concentration defined by the reaction cycle given above results when nitrogen oxide reacts with non-methane hydrocarbons. Oxygen atoms from the hydrocarbon radical oxidize nitric oxide to nitrogen dioxide without ozone being used up. Thus ozone concentrations are not depleted and can build up quickly.

Ozone can also be formed naturally in the atmosphere by electrical discharge, and in the stratosphere by solar radiation. The former process is not capable of producing significant urban concentrations of this pollutant; however, there is some belief that incursion of ozone from the stratosphere can contribute significantly to elevated ground level concentrations of ozone under certain meteorological conditions.

Injury to vegetation is one of the earliest manifestations of photochemical air pollution, and sensitive plants are useful biological indicators of this type of pollution. The visible symptoms of photochemical oxidant produced injury to plants may be classified as:

- Acute injury, identified by cell collapse with subsequent development of necrotic patterns.
- Chronic injury, identified by necrotic patterns or with other pigmented patterns.
- Physiological effects, identified by growth alterations, reduced yields, and changes in the quality of plant products. The acute symptoms are generally characteristic of a specific photochemical oxidant; though chronic injury patterns are not. Ozone injury to leaves is identified as a stripling or flecking. Adverse effects on sensitive vegetation have been observed from exposure to photochemical oxidant concentrations of about 100 ug/m^3 (0.05 ppm) for 4 hours.

Adverse effects on materials (rubber products and fabrics) from exposure to photochemical oxidants have not been precisely quantified, but have been observed at the levels presently occurring in many urban atmospheres.

Ozone accelerates the aging of many materials, resulting in rubber cracking, dye fading and paint erosion. These effects are linearly related to the total dose of ozone and can occur at very low levels, given long duration exposures.

Ozone is a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues and respiratory functions. Clinical and epidemiological studies have demonstrated that ozone impairs the normal mechanical function of the lung, causing alterations in respiration; the most characteristic of which are shallow, rapid breathing and a decrease in pulmonary compliance. Exposure to ozone results in clinical symptoms such as chest tightness, coughing, and wheezing.

Alterations in airway resistance can occur, especially to those with respiratory diseases (asthma, bronchitis, emphysema). These effects may occur in sensitive individuals, as well as in healthy exercising persons, at short-term ozone concentrations between 0.15 and 0.25 ppm.

Ozone exposure increases the sensitivity of the lung to bronchoconstrictive agents such as histamine, acetylcholine and allergens, as well as increasing the individual's susceptibility to bacterial infection. Simultaneous exposure to ozone and SO_2 can produce larger changes in pulmonary function than exposure to either pollutant alone.

Peroxyacetylnitrate (PAN) is an eye irritant, and its effects often occur in conjunction with the effects of ozone.
Two characteristics of ozone and oxidant exposures should be cited:

- Ozone itself is a primary cause of most of the health effects reported in toxicological and experimental human studies and the evidence for attributing many health effects to this substance alone is very compelling.

- The complex of atmospheric photochemical substances is known to produce health effects, some of which are not attributable to pure ozone but may be caused by other photochemical substances in combination with ozone.

Particulate Matter (PM)

Not all air pollutants are in the gaseous form. Small solid particles and liquid droplets, collectively called particulates or aerosols, are also present in the air in great numbers and may constitute a pollution problem. Particulates entering the atmosphere differ in size and chemical composition. The effects of particulates on health and welfare are directly related to their size and chemical composition.

Particulate matter in the atmosphere consists of solids, liquids, and liquids-solids in combination. Suspended particulates generally refer to particles less than 100 micrometers in diameter (human hair is typically 100 micrometers thick). Particles larger than 100 micrometers will settle out of the air under the influence of gravity in a short period of time.

Typical sources emitting particles into the atmosphere are combustion of fossil fuels (ash and soot), industrial processes (metals, fibers, etc.), fugitive dust (wind and mechanical erosion of local soil) and photochemically produced particles (complex chain reactions between sunlight and gaseous pollutants). Combustion and photochemical products tend to be smaller in size (less than 1 micrometer); fugitive dust and industrial products are typically larger in size (greater than 1 micrometer).

Particles which cause the most health and visibility difficulties are those less than 1.0 micrometer in size. These particles are also the most difficult to reduce in numbers by the various industrial removal techniques. Rainfall accounts for the major removal of these smaller particles from the air.

One of the major problems associated with high concentrations of particulates is that the interaction between the particles, sunlight and atmospheric moisture can potentially result in the climatic effects and diminished visibility (haze). Particles play a key role in the formation of clouds, and emissions of large numbers of particles can, in some instances, result in local increases in cloud formation and, possibly, precipitation. Particles in the size range of 0.1 to 1.0 micrometers are the most efficient in scattering visible light (wave length 0.4 to 0.7 micrometers) thereby reducing visibility. Particles combined with high humidity can result in the formation of haze which can cause hazardous conditions for the operation of motor vehicles and aircraft.

Particulate pollutants enter the human body by way of the respiratory system and their most immediate effects are upon this system. The size of the particle determines its depth of penetration into the respiratory system. Particles over 5 micrometers are generally deposited in the nose and throat. Those that do penetrate deeper in the respiratory system to the air ducts (bronchi) are often removed by ciliary action. Particles ranging in size from 0.5 - 5.0 micrometers in diameter can be deposited in the bronchi, with few reaching the air sacs (alveoli). Most particles

deposited in the bronchi are removed by the cilia within hours. Particles less than 0.5 micrometer in diameter reach and may settle in the alveoli. The removal of particles from the alveoli is much less rapid and complete than from the larger passages. Some of the particles retained in the alveoli are absorbed into the blood.

Besides particulate size, the oxidation state, chemical composition, concentration and length of time in the respiratory system contribute to the health effects of particulates. Particulates have been associated with increased respiratory diseases (asthma, bronchitis, emphysema), cardiopulmonary disease (heart attack) and cancer.

Plant surfaces and growth rates may be adversely affected by particulate matter. Particulate air pollution also causes a wide range of damage to materials including corrosion of metals and electrical equipment and the soiling of textiles and buildings.

Sulfur Dioxide (SO_2)

Sulfur dioxide is an atmospheric pollutant which results from combustion processes (mainly burning of fossil fuels containing sulfur compounds), refining of petroleum, manufacture of sulfuric acid and smelting of ores containing sulfur. Reduction of sulfur dioxide pollution levels can generally be achieved through the use of low sulfur content fuels or the use of chemical sulfur removal systems.

Once in the atmosphere some sulfur dioxide can be oxidized (either photochemically or in the presence of a catalyst) to SO_3 (sulfur trioxide). In the presence of water vapor, SO_3 is readily converted to sulfuric acid mist. Other basic oxides combine with SO_3 to form sulfate aerosols. Sulfuric acid droplets and other sulfates are thought to account for about 5 to 20 percent of the total suspended particulate matter in urban air. These compounds can be transported large distances and come back to earth as a major constituent of acid precipitation. Many of the resultant health problems attributed to SO_2 may be a result of the oxidation of SO_2 to other compounds.

The effects of SO_2 on health are irritation and inflammation of tissue that it directly contacts. Inhalation of SO_2 causes bronchial constriction resulting in an increased resistance to air flow, reduction of air volume and an increase of respiratory rate and heart rate.

SO_2 can exacerbate pre-existing respiratory diseases (asthma, bronchitis, emphysema). The enhancement (synergism) by particulate matter of the toxic response to sulfur dioxide has been observed under conditions which would promote the conversion of sulfur dioxide to sulfuric acid. The degree of enhancement is related to the concentration of particulate matter. A twofold to threefold increase of the irritant response to sulfur dioxide is observed in the presence of particulate matter capable of oxidizing sulfur dioxide to sulfuric acid.

Sulfuric acid (H_2SO_4) inhalation causes an increase in the respiratory system's mucous secretions, which reduces the system's ability to remove particulates via mucociliary clearance. This can result in an increase incidence of respiratory infection.

Carbon Monoxide (CO)

The major source of carbon monoxide (CO) is motor vehicles. The USEPA has kept under its jurisdiction the regulation of emission control equipment on new motor vehicles while the State's responsibility for reducing excessive ambient carbon monoxide levels is exercised by developing transportation plans for congested urban areas.

The toxic effects of high concentrations of CO on the body are well known. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin (the oxygen carrying molecule in the blood) to form carboxyhemoglobin (COHb). This reaction reduces the oxygen carrying capacity of blood because the affinity of hemoglobin for CO is over 200 times that for oxygen. The higher the percentage of hemoglobin bound up in the form of carboxyhemoglobin, the more serious is the health effect.

The level of COHb in the blood is directly related to the CO concentration of the inhaled air. For a

given ambient air CO concentration, the COHb level in the blood will reach an equilibrium concentration after a sufficient time period. This equilibrium COHb level will be maintained in the blood as long as the ambient air CO level remains unchanged. However, the COHb level will slowly change in the same direction as the CO concentration of the ambient air as a new equilibrium of CO in the blood is established.
The lowest CO concentrations shown to produce adverse health effects result in aggravation of cardiovascular disease. Studies demonstrate that these concentrations have resulted in decreased exercise time before the onset of pain in the chest and extremities of individuals with heart or circulatory disease. Slightly higher CO levels have been associated with decreases in vigilance, the ability to discriminate time intervals and exercise performance.

Evidence also exists indicating a possible relationship between CO and heart attacks, the development of cardiovascular disease and fetal development.

Studies on the existing ambient levels of CO do not indicate any adverse effects on vegetation, materials, or other aspects of human welfare.

Nitrogen Dioxide (NO_2)

Nitrogen gas (N_2) is an abundant and inert gas which makes up almost 80 percent of the earth's atmosphere. In this form, it is harmless to man and essential to plant metabolism. Due to its abundance in the air, it is a frequent reactant in many combustion processes. When combustion temperatures are extremely high, as in the burning of coal, oil, gas and in automobile engines, atmospheric nitrogen (N_2) may combine with molecular oxygen (O_2) to form various oxides of nitrogen (NO_x). Of these, nitric oxide (NO) and nitrogen dioxide (NO_2) are the most important contributors to air pollution; NO_x generally is used to represent these. Nitric oxide (NO) is a colorless and odorless gas. It is the primary form of NO_x resulting from the combustion process. NO_x contributes to haze and visibility reduction. NO_x is also known to cause deterioration and fading of certain fabrics and damage to vegetation. Depending on concentration and extent of exposure, plants may suffer leaf lesions and reduced crop yield.

Sensitivity of plants to nitrogen oxides depends on a variety of factors including species, time of day, light, stage of maturity and the presence or absence of other air pollutants such as sulfur dioxide and ozone.

There is a lack of strong evidence associating health effects with most nitrogen oxide compounds. NO_2, a secondary derivative of atmospheric nitric oxide, however, has been clearly established as exerting detrimental effects on human health and welfare.

NO_2 can cause an impairment of dark adaptation at concentrations as low as 0.07 ppm. NO_2 can cause an increase in airway resistance, an increase in respiratory rate, an increase in sensitivity to bronchoconstrictors, a decrease in lung compliance and an enhanced susceptibility to respiratory infections. NO_2 is a deep lung irritant capable of producing pulmonary edema if inhaled in sufficient concentrations. When NO_2 is inhaled in concentrations with other pollutants, the effects are additive.
NO_x may also react with water to form corrosive nitric acids, a major component of acid precipitation. Additionally, NO_x and various other pollutants (e.g., hydrocarbons) may react in the presence of sunlight to product photochemical oxidants. These are extremely unstable compounds which damage plants and irritate both the eyes and respiratory system of people. Ozone (O_3) and a group of chemicals called peroxyacetylnitrates (PAN) are the major constituents of photochemical oxidants.

Lead (Pb)

Historically atmospheric lead came primarily from combustion of leaded gasoline. However, the use of unleaded gas since 1975 has reduced mobile source lead emissions by over 90%. Currently stationary sources, such as lead smelters, battery manufacturers, iron and steel producers and others can contribute significant amounts of lead to their immediate vicinity.

Lead is a stable compound which persists and accumulates both in the environment and in the human body. Lead enters the human body through ingestion and inhalation with consequent absorption into the blood stream and distribution to all body tissues. Clinical, epidemiological and toxicological studies have demonstrated exposure to lead adversely affects human health.

Low level lead exposure has been found to interfere with specific enzyme systems and blood production. Kidney and neurological cell damage has also been associated with lead exposure. Animal studies have demonstrated that lead can contribute to reduced fertility and birth defects. Children are the population segment most sensitive to many of lead's adverse effects.

Other serious potential effects from lead exposure are behavioral. Brain damage has been well documented in cases of severe lead poisoning in children. Restlessness, headaches, tremors and general symptoms of mental retardation have been noted. The brain seems to be particularly sensitive to lead poisoning, yet it is unclear whether low level exposure will result in brain dysfunction. Although evidence exists which indicates that children with above-normal blood lead levels are more likely to demonstrate poor academic performance, the studies remain inconclusive.

Illinois Ambient Air Quality Standards and Episode Levels

Consistent with the intent of the Environmental Protection Act of the State of Illinois, Illinois has adopted ambient air quality and episode standards that specify maximum permissible short-term and long-term concentrations of various contaminants in the atmosphere. Ambient air quality and episode standards are limits on atmospheric concentrations of air contaminants established for the purpose of protecting the public health and welfare.

The Illinois and National Ambient Air Quality Standards consist of a primary and secondary standard for each pollutant (contaminant) as presented in **Table 1**. The Illinois Air Pollution Episode Levels are presented in **Table 2**. The primary standard and episode criteria represents the level of air quality which is necessary to protect the public health. Air entering the respiratory tract must not menace health. Therefore, the air quality standards must, as a minimum, provide air which will not adversely affect, through acute or chronic symptoms, the public health. Air contaminants increase the aggravation and the production of respiratory and cardio-pulmonary diseases. The secondary standard defines the level of air quality which is necessary to protect the public welfare. This includes, among other things, effects on crops, vegetation, wildlife, visibility and climate, as well as effects on materials, economic values and on personal comfort and well-being. The standards are legally enforceable limitations, and any person causing or contributing to a violation of the standards is subject to enforcement proceedings under the Environmental Protection Act. The standards have also been designed for use as a basis for the development of implementation plans by State and local agencies for the abatement and control of pollutant emissions from existing sources, and for the determination of air contaminant emission limitations to ensure that population, industry and economic growth trends do not add to the region's air pollution problems.

Table 1: Summary of National and Illinois Ambient Air Quality Standards

Pollutant	Averaging Time	Standard	
		Primary	**Secondary**
Standard units are micrograms per cubic meter (ug/m^3) and parts per million (ppm)			
Particulate Matter	Annual Arithmetic Mean	50 ug/m^3	Same as Primary
10 micrometers (PM_{10})	24-hour	150 ug/m^3	Same as Primary
Particulate Matter	Annual Arithmetic Mean	15.0 ug/m^3	Same as Primary
2.5 micrometers ($PM_{2.5}$)	24-hour	65 ug/m^3	Same as Primary
Sulfur dioxide	Annual Arithmetic Mean	0.03 ppm	None
	24-hour	0.14 ppm	None
	3-hour	None	0.5 ppm
Carbon Monoxide	1-hour	35 ppm	Same as Primary
	8-hour	9 ppm	Same as Primary
Ozone	1-hour/day	0.12 ppm	Same as Primary
	8-hour/day	0.08 ppm	Same as Primary
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm	Same as Primary
Lead	Quarterly Arithmetic Mean	1.5 ug/m^3	Same as Primary

All PM_{10} and $PM_{2.5}$ standards are referenced to local conditions of temperature and pressure rather than standard conditrions (760 mm and 25 deg C).
Note: The State of Illinois has not adopted the $PM_{2.5}$ or 8-hour ozone standards at this time.

Table 2: Illinois Air Pollution Episode Levels

Pollutant	Advisory	Yellow alert	Red Alert	Emergency
Particulate Matter	2-hour	24-hour	24-hour	24-hour
micrograms per cubic meter	420	350	420	500
Sulfur Dioxide	2-hour	4-hour	4-hour	4-hour
parts per million	0.30	0.30	0.35	0.40
Carbon Monoxide	2-hour	8-hour	8-hour	8-hour
parts per million	30	15	30	40
Nitrogen Dioxide	2-hour	1-hour	1-hour	1-hour
parts per million	0.40	0.60	1.20	1.60
		or	or	or
		24-hour	24-hour	24-hour
		0.15	0.30	0.40
Ozone	1-hour	1-hour	1-hour	1-hour
parts per million	0.12	0.20	0.30	0.50

SECTION 2: STATEWIDE SUMMARY OF AIR QUALITY FOR 1999

OZONE

Monitoring was conducted at 42 locations during at least part of the April-October "ozone season" and at least 75% data capture was obtained at all 42 sites. There were no network changes in 1999.

A total of 3 sites recorded hourly concentrations above the 0.12 parts per million (ppm) 1-hour standard (Jerseyville, Alton, and Wood River). There were three exceedance days recorded in Jersey County (downwind of the Metro-East) and one exceedance day recorded in the Metro-East (Alton and Wood River on the same day). There were no exceednaces of the 1-hour in the Chicago area in 1999. The highest 1-hour concentration was 0.139 ppm in Jerseyville compared with a statewide high 1-hour value of 0.140 ppm in 1998. The highest value recorded in the Chicago area was 0.119 ppm in Cary.

Data is also presented to compare with the 8-hour standard of 0.08 ppm. The appropriate statistic for comparison with the 8-hour Standard is the fourth highest value, which is averaged over a three year period. A total of 18 sites (10 in the Chicago area 3 in the Metro-east area, and 5 in the rest of the State) had fourth highest values above 0.08 ppm in 1998. The highest fourth high value was 0.100 ppm at Jerseyville. The highest fourth high in the Chicago area was 0.097 ppm at Chicago - SWFP.

Figure 1 shows for each year the statewide average of each site's highest hourly ozone value for the ten year period 1990-1999. The graph shows a great deal of year-to-year fluctuation and a fairly flat 10-year trend. The Statewide average for 1999 was 0.106 ppm compared with 0.102 ppm in 1998 and 0.104

ppm in 1997. Statewide, the total number of excursion days in 1999 was four compared with three in 1998 and five in 1997.

Figure 1
Average 1-hr Ozone Maximum
(ppm)

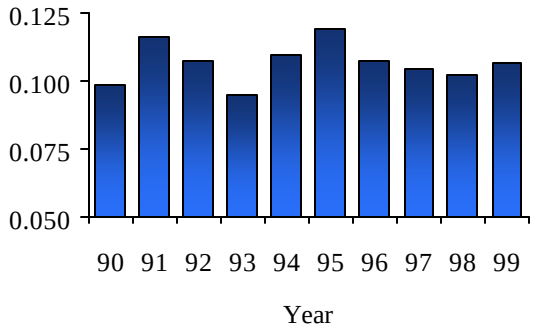


Figure 2
Statewide Ozone 1-Hour
Exceedance Day Trend

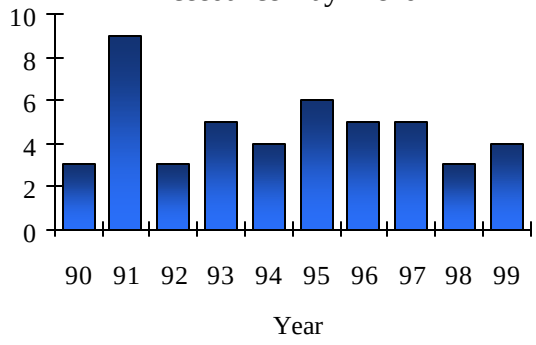


Figure 2 shows the trend of the total number of days on which one or more sites exceeded the ozone standard in Illinois for the same period 1990-

1999. This trend is generally flat with the conducive years of 1991 and 1995 standing out.

Overall, Illinois's weather was slightly above normal in terms of meteorological conditions favorable to ozone formation and transport in the Chicago area in 1999 and near normal downstate.

July and September were the most conducive months in terms of meteorological conditions Statewide. In terms of conducive days, the Chicago area had 35% above the normal number and the Metro-East area had 20% below the normal number.

PARTICULATE MATTER

In 1999 there were 24 sites monitoring PM_{10}. The reduction in the PM_{10} network from 1998 was due to the implementation of the $PM_{2.5}$ network. **Figure 3** shows the trend of the statewide annual averages for PM_{10} from 1990-1999. The Statewide average in 1999 was 28 ug/m^3 compared with 30 ug/m^3 in 1998 and 28 ug/m^3 in 1997.

For PM_{10} the Statewide average of the maximum 24-hour averages in 1999 was 78 ug/m^3 compared with 73 ug/m^3 in 1998 and 71 ug/m^3 in 1997. **Figure 4** depicts this trend for the period 1990-1999.

No sites exceeded the primary annual standard of 50 ug/m^3. The highest annual average was 44 ug/m^3 in Granite City - 2040 Washington. The lowest annual was 20 ug/m^3 in Springfield. The highest 24-hour average recorded in Oglesby with a value of 150 ug/m^3 compared with a high 24-hour value of 168 ug/m^3 at the same site in 1998.

Figure 3
Particulate Matter Annual Trends
(ug/m3)

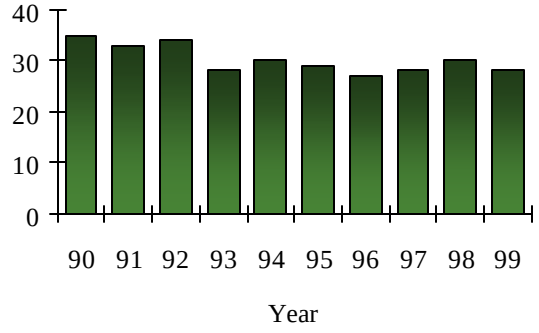
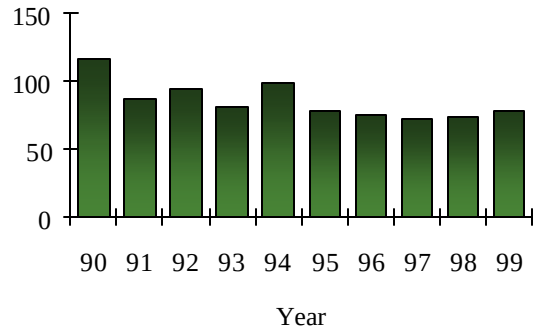


Figure 4
Particulate Matter 24-hr Trends
(ug/m3)



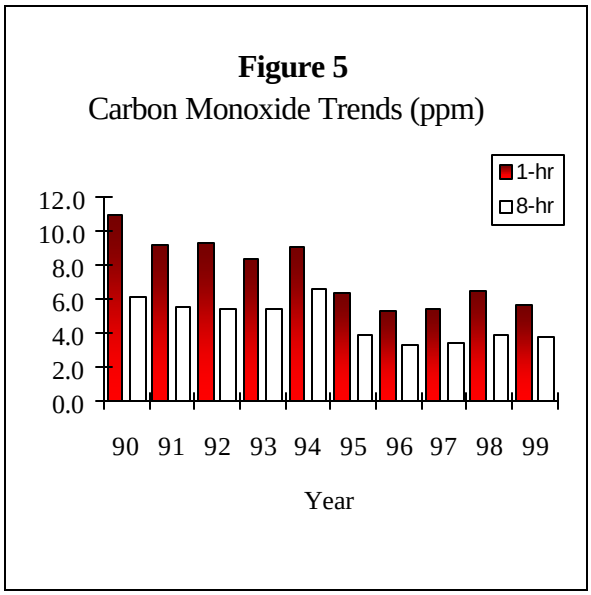
In addition to PM_{10}, Federal Reference Method (FRM) monitoring was begun at 25 sites for $PM_{2.5}$ in the first year of a two year network phase-in. Because of start-up and cold weather operational problems insufficient data was collected in the first quarter to obtain valid quarterly averages at several sites and, as a result, valid annual averages were obtained for 17 of the 25 sites. Overall averages ranged from 14.5 ug/m^3 in background areas to 21.8 ug/m^3 in industrialized areas. A total of 16 sites recorded averages above 15.0 ug/m^3, the level

of the annual standard. The maximum 24-hour averages ranged from 36.1 ug/m^3 to 55.9 ug/m^3. All $PM_{2.5}$ monitoring sites except two background sites recorded maximum 24-hour averages above 40 ug/m^3.

CARBON MONOXIDE

There were no exceedances of either the 1-hour primary standard of 35 ppm or the 8-hour primary standard of 9 ppm in 1999. The highest 1-hour average was 7.9 ppm recorded in Peoria. The highest 8-hour average was 5.4 ppm also recorded in Peoria.

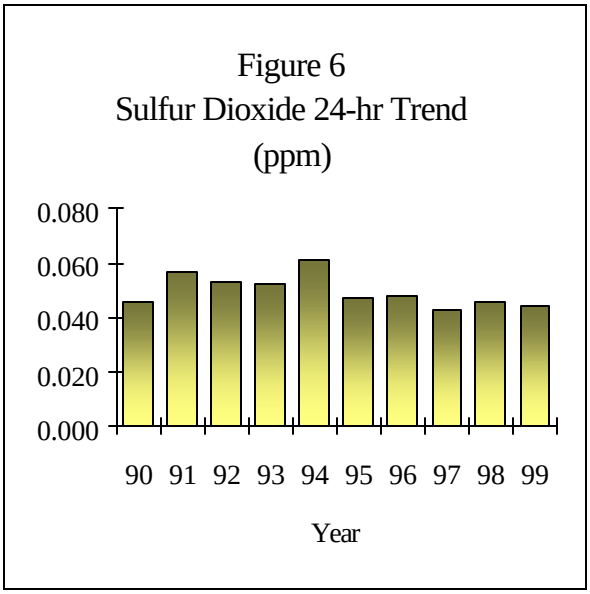
Figure 5 shows the trend for the period 1990-1999 for the statewide average of the 1-hour and 8-hour high CO values. The overall trend for both averages is downward. The statewide average of the 1-hour high was 5.6 ppm in 1999 compared with 6.5 ppm in 1998. The statewide average for the 8-hour high was 3.7 ppm in 1999 compared with 3.8 ppm in 1998.



SULFUR DIOXIDE

There were no exceedances of the 24-hour primary standard of 0.14 ppm or the annual primary standard of 0.03 ppm in 1999. There was one exceedance of the 3-hour secondary standard recorded at Marissa.

The maximum 24-hour average was a value of 0.107 ppm recorded in Marissa. This compares with a high 24-hour average in 1998 of 0.125 ppm. The highest 3-hour average of 0.567 ppm was recorded in Marissa. The Statewide annual average for 1999 was 0.006 ppm. The Statewide average in 1997 was 0.005 ppm.

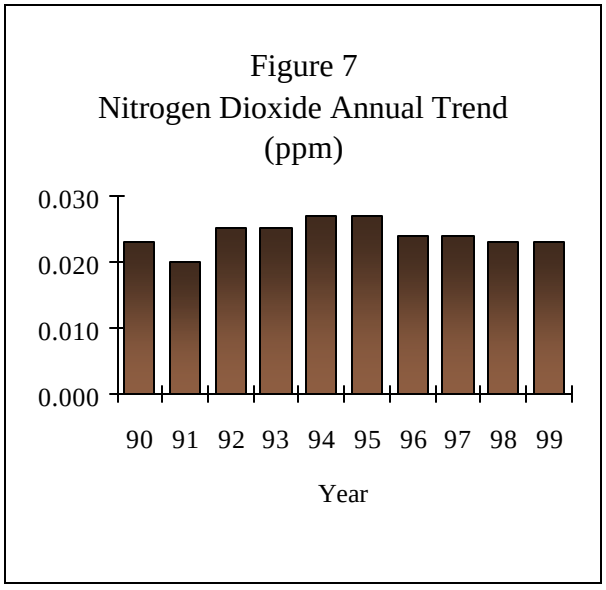


Since 1984 that Statewide trend of annual averages has been flat, ranging from 0.009 ppm to 0.005 ppm. **Figure 6** shows the statewide trend for the maximum 24-hour averages for the period 1990-1999. The 24-hour average trend has been overall downward; however a greater degree of year-to-year fluctuations have occurred. The statewide average for 1999 was 0.044 ppm compared with the 1998 average of 0.046 ppm.

NITROGEN DIOXIDE

There were no violations of the annual primary standard of 0.053 ppm recorded in Illinois during 1999. The highest annual average of 0.032 ppm was recorded at Chicago - CTA. The Statewide average for 1999 was 0.023 ppm compared with 0.023 ppm in 1998 and 0.024 ppm in 1997.

Two sites only operated during part of the ozone season as PAMS. **Figure 7** depicts the trend of statewide averages from 1990-1999. The trend has been generally stable for the period ranging from 0.020 ppm to 0.027 ppm. There have been no violations of the annual standard since 1980.



LEAD

Perhaps the greatest success story in controlling criteria pollutants is lead. As a direct result of the Federal Motor Vehicle Control Program which has required the use of unleaded gas in automobiles since 1975, lead levels have decreased by more than 90% statewide.

The source oriented sites at Chemetco continue to record the highest quarterly lead averages in the State in 1999. Two sites in the Chemetco network (Sites 2E and 5-N) recorded a total of two violations of the quarterly primary standard of 1.5 ug/m^3 in 1999. The highest quarterly lead average was measured at Chemetco - Site 5-N with a value of 2.50 ug/m^3.

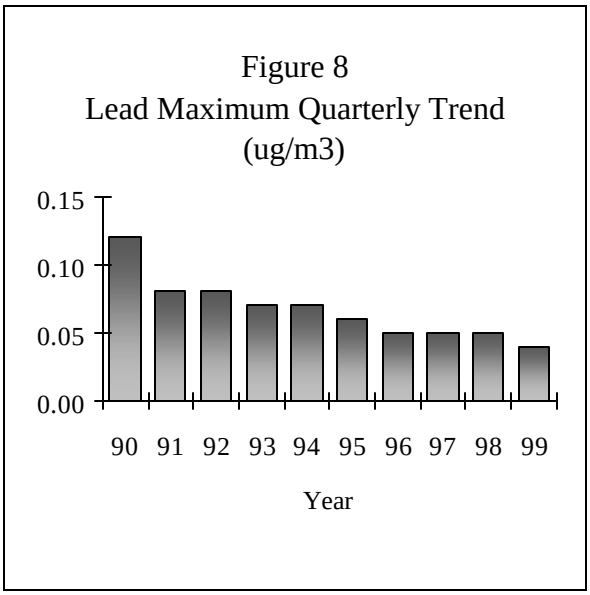


Figure 8 shows the trend of the statewide maximum quarterly average from 1990-1999. This trend does not include the industrial sites. The trend shows that ambient lead levels have decreased by over 50% during the period.

FILTER ANALYSIS RESULTS

The TSP samples analyzed, in addition to lead, for specific metals, sulfates and nitrates. Several of the metals analyzed (arsenic, beryllium, cadmium, chromium, and nickel) have known toxic properties. Other metals such as iron and manganese can be used as tracers to help identify sources of high particulate values. Sulfates and nitrates are precursors of acid precipitation/deposition and add to the understanding of this inter-regional problem. They may also be important constituents of the $PM_{2.5}$ values. There are currently no State or Federal ambient air quality standards for these parameters.

The areas with the highest metals concentrations in Illinois are generally the heavy industrialized areas of the Metro-East (Granite City and East St. Louis) and

South Chicago, especially for iron and manganese. The highest 24-hour average for arsenic was 0.033 ug/m^3 measured in East St. Louis. The highest annual average of 0.003 ug/m^3 was recorded at the same site. There were no measurable beryllium 24-hour averages recorded statewide. East St. Louis recorded the highest cadmium concentrations with a maximum 24-hour average of 0.134 ug/m^3 and the highest annual average of 0.008 ug/m^3 . The highest 24-hour chromium average was 0.030 ug/m^3 recorded at Maywood. Maywood had the highest annual average at 0.011 ug/m^3. The highest iron and manganese values were recorded in the industrial areas of Granite City and South Chicago and the high traffic areas of Chicago - Cermak and Maywood. The highest 24-hour average for nickel was recorded at Wood River with a value of 0.072 ug/m^3. The highest annual average was in Maywood with an average of 0.011 ug/m^3. All selenium 24-hour averages were less than 0.010 ug/m^3 . The highest 24-hour value for vanadium was 0.018 ug/m^3 recorded at Granite City – 15th & Madison. The highest annual average was 0.004 ug/m^3 also recorded at 15th & Madison in Granite City. For nitrates the highest 24-hour average was 19.0 ug/m^3 recorded in Schiller Park. The highest annual average was 5.8 ug/m^3 also at Schiller Park. For sulfates the highest 24-hour average was 31.9 ug/m^3 recorded at East St. Louis. The highest annual average was 9.6 ug/m^3 also at East St. Louis.

VOLATILE ORGANIC COMPOUNDS

Sampling for volatile organic compounds (VOCs) continues as part of the photochemical assessment monitoring site (PAMS) network. The network consists of four sites: Braidwood - Type 1 background, Chicago - Jardine - Type 2 source area, Northbrook - Type 3 peak ozone area, and Zion - Type 4 domain edge.

Sampling was conducted for the period June - August. Automated Gas Chromatograph (GC) systems providing hourly data were located at all four sites. In addition at all four sites, manual carbonyl samples were taken every six days at Chicago - Jardine and supplemented on high ozone days at all four sites. The data is presented as parts per billion carbon (ppbc). This process reduces all of the results to a common basis in terms of single carbon atoms. The aldehydes are expressed in regular parts per billion volume.

The highest compounds in terms of 1-hour and 24-hour averages at Chicago - Jardine were Isopentane, Ethane, Propane, M/P-Xylene, Ethylene, Toluene, and Propylene. The lowest compounds were Isoprene, Methylheptanes, ethyltoluenes, and pentenes. The highest compounds for 1-hour and 24-hour averages at Northbrook were Isopentane, Toluene, Ethylbenzene, Isoprene, M/P Xylene, Ethane, 2,2,4-Trimethylpentane, and N-Pentane. The lowest compounds were Butenes, Pentenes, Methylheptanes, Diethylbenzenes, and Ethyltoluenes. The highest compounds for 1-hour and 24-hour averages at Zion were Isopentane, Ethane, Propane, Isoprene, N-Pentane, M/P Xylene, Formaldehyde and Toluene. The lowest compounds were Butenes, Pentenes, Methylheptanes, Diethylbenzenes, and Ethyultoluenes. The highest 1-hour and 24-hour compounds at Braidwood were Ethane, Ethylene, Propane, Isopentane, Isoprene, Isobutane, and Formaldehyde. There were numerous compounds that had minimal detection at Braidwood.

MERCURY

Mercury data is being collected at two sites in Cook County. The samples are collected for 24 hours. The highest 24-hour sample was 3.2 ng/m^3 at Alsip. The highest annual average was 1.8 ng/m^3 also at Blue Island. The annual average at Alsip was 1.3 ng/m^3.

SECTION 3: POLLUTANT STANDARDS INDEX

The Pollutant Standards Index (PSI) is the national standard method for reporting air pollution levels to the general public in 1999. A revised index (the Air Quality Index) was implemented late in the year and will be the basis for Section 3 in future years (see the cover for a description). An index such as the PSI is necessary because there are several air pollutants, each with different typical ambient concentrations and each with different levels of harm, and to report actual concentrations for all of them would be confusing. The PSI uses a single number and a one or two-word term to describe the air quality in an easy-to-remember and easy-to-understand way, taking all the pollutants into account.

The PSI is based on the short-term Federal National Ambient Air Quality Standards (NAAQS), the Federal episode criteria, and the Federal Significant Harm levels for five of the "criteria pollutants", namely:

- Ozone (O_3)
- Sulfur dioxide (SO_2)
- Carbon monoxide (CO)
- Particulate matter (PM_{10})
- Nitrogen dioxide (NO_2)

In each case, the short-term primary NAAQS corresponds to a PSI of 100, the Significant Harm level corresponds to a PSI of 500, and the episode criteria correspond to intermediate hundreds. NO_2 does not have short-term NAAQSs; PSI begins at 201 for it. Various PSI intervals have been given Descriptor Categories, see **Table 3**.

Unhealthful air quality is uncommon in Illinois, and Very Unhealthful air quality is rare. There has never been an occurrence of Hazardous air quality in Illinois.

The PSI is computed as follows: data from pollution monitors in an area are collected, and the PSI subindex for each pollutant is computed using formulas derived from the index/concentration relations noted above. Nomograms and tables are also available for this purpose. The data used are:

- O_3 the highest 1-hour average so far that calendar day
- SO_2 the most recent 24-hour average
- CO the highest 8-hour average so far that calendar day
- PM_{10} the most recent 24-hour average
- NO_2 the highest 1-hour average (if above 600 ppb)

Continuous monitors are necessary for all the pollutants except PM_{10}. PM_{10} readings are based on both continuous monitors and high volume air samplers (hi-vol).

Once all the subindices for the various pollutants have been computed, the highest is chosen by inspection. That is the PSI for the area, and the pollutant giving rise to it is the "critical pollutant". Thus if, for Anytown, Illinois, we obtained the following subindices:

O_3 = 45
SO_2 = 23
CO = 19
PM_{10} = 61

Table 3: PSI Descriptor Categories and Health Effects

PSI Range	Descriptor Category
0-50	Good (G)
51-100	Moderate (M)
101-199	Unhealthful (UH)
200-299	Very Unhealthful (VUH)
300 and above	Hazardous (HAZ)

Index & Category	Health Effects	Cautionary Statements
101-199, Unhealthful	Mild aggravation of symptoms in susceptible persons, with irritation in the healthy population.	Persons with existing heart or respiratory ailments should reduce physical exertion and outdoor activity.
200-299, Very Unhealthful	Significant aggravation of symptoms and decreased exercise tolerance in persons with heart or lung disease and widespread symptoms in the healthy population.	Elderly persons and persons with existing heart or lung disease should stay indoors and avoid physical exertion and outdoor activity
300-400, Hazardous	Premature onset of certain diseases in addition to significant aggravation of symptoms and decreased exercise tolerance in healthy persons.	Elderly persons and persons with existing diseases should stay indoors and avoid physical exertion. General population should avoid outdoor activity.
401-500, Hazardous	Premature death of ill and elderly. Healthy people will experience adverse symptoms that affect their normal activity.	All persons should remain indoors, keeping windows and doors closed. All persons should minimize physical exertion and avoid traffic.

Anytown's PSI for that day would be 61, which is in the Moderate category, and the Critical Pollutant would be particulates.

The Illinois EPA issues the PSI for 10 areas, or Sectors, in Illinois (**Table 4**). These correspond to metropolitan areas with populations greater than 200,000.

Illinois PSI's are computed from data up to and including the 3 PM local time readings every weekday. A bulletin giving the PSI numbers, descriptors, critical pollutants, and a

forecast of the category for the next day's PSI for each of the sectors is issued over the Illinois Weatherwire, a service of the National Weather Service, about 4 PM each work day. Almost all TV stations and many radio stations and newspapers receive the Illinois Weatherwire, and are therefore able to inform the audience about the PSI either immediately
or on the evening news. In the Chicago and Cook County area, PSI's are available on phone recordings maintained by the Cook County Department of

Environmental Control and the Chicago Department of the Environment.

If the PSI subindex for any pollutant in any sector should reach or exceed the Unhealthful (or any higher) category late in the afternoon or on weekends when the PSI is not published, the IEPA puts out a special bulletin on the Illinois Weatherwire. If data for one of the pollutants used in computing PSI is missing, the PSI is computed using the data available, ignoring the missing datum. It occasionally happens that two pollutants have the same subindex; in such cases there are two critical pollutants.

1999 Illinois PSI Summary

Air quality was in the "Good" category most often in 1999. All Sectors had a higher frequency of "Good" than "Moderate" and "Unhealthful". All sectors except Metro-East had 80% or more of the days in the "Good" category. Statewide there were 2 occurrences of Unhealthful air quality in one or more sectors in 1999 compared with 4 in 1998 and 5 in 1997. The pollutant breakdown for unhealthfuls were all 2 due to ozone in the Metro-East (4 additional Unhealthful days occurred in Jersey County, not a PSI Sector). **Figure 9** presents the PSI statistics for each sector. The pie chart shows the percent of time each sector was in a particular category. In addition to Unhealthful PSI days, there were four occurrences (three days) of the first stage episode conditions (Advisory) being triggered for ozone. Advisories were declared for two days in the Metro-East Sector and two days in Jersey County. An Advisory is declared when ozone levels have reached unhealthful concentrations on a particular day and meteorological conditions are such that these unhealthful levels are expected again the next day. The Advisories are issued for the entire Air Quality Control Region affected by the high ozone levels. The days for which advisories were issued were September 2 and September 4 in the Metro-East and July 25 and September 2 in Jersey County.

Table 4: PSI Sectors in Illinois

Chicago Metropolitan Area:	
Lake County Sector	Lake County only
North and West Suburbs Sector	Parts of Cook, Du Page, and Mc Henry Counties north of I-290 (the Eisenhower Expressway) and outside of Chicago city limits.
Chicago Sector	All areas within the city limits of Chicago
West and South Suburbs Sector	Parts of Cook and DuPage Counties south of I-290 and outside of Chicago city limits
Will County/Joliet Sector	Will County only
Aurora-Elgin Sector	The eastern part of Kane County
Downstate areas:	
Rockford Sector	Approximately 10 mile diameter circle centered on downtown Rockford
Quad Cities Sector	Illinois portion of the Quad Cities Area
Peoria Sector	Approximately 10 mile diameter circle centered on downtown Peoria in parts of Peoria, Woodford and Tazewell Counties
Metro East Sector	Illinois portion of the St. Louis Metropolitan Area approximately 15 miles wide east of the Mississippi River in Madison and St. Clair Counties

Figure 9: 1999 Pollutant Standards Index Summaries by Sector

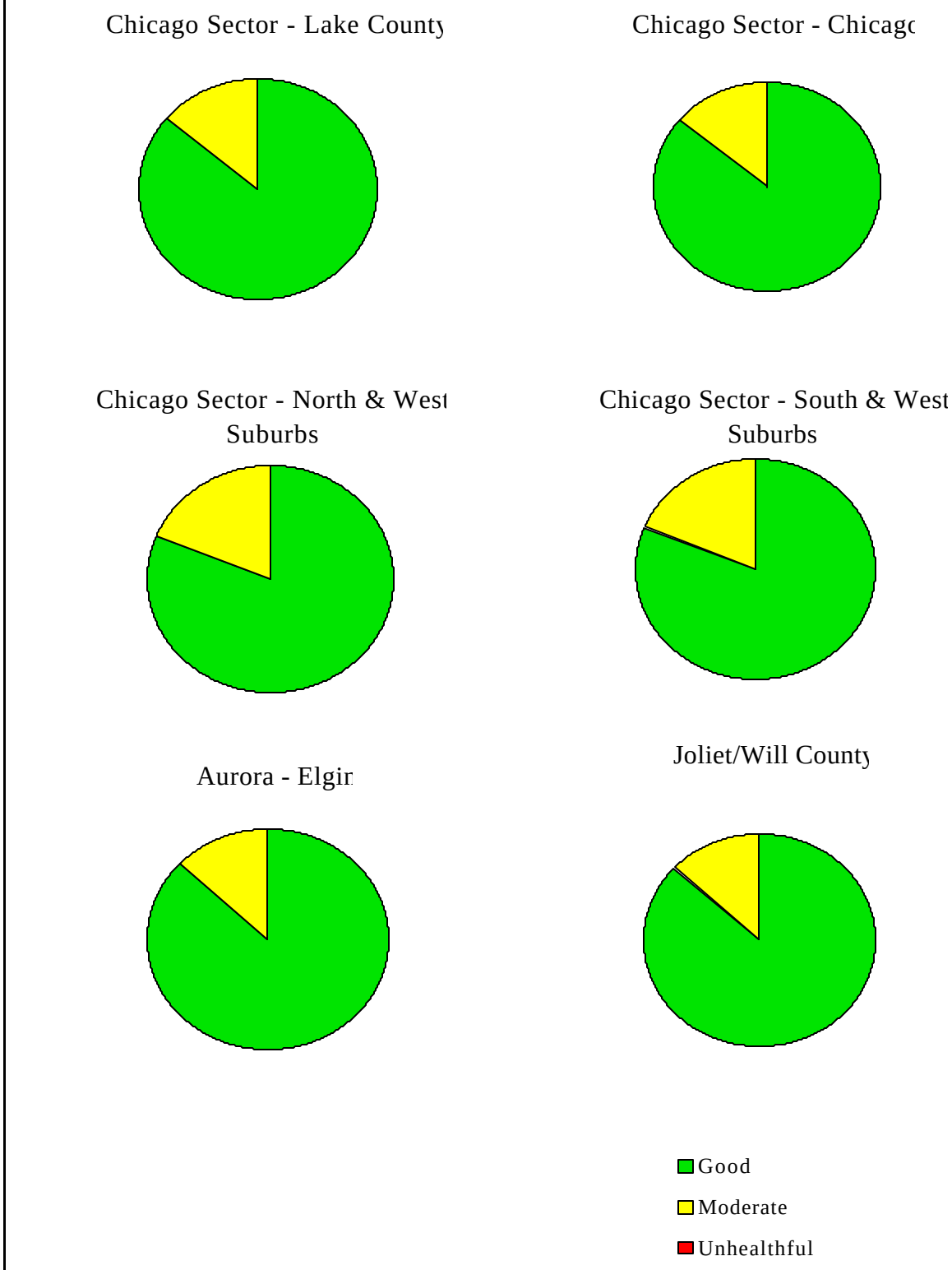
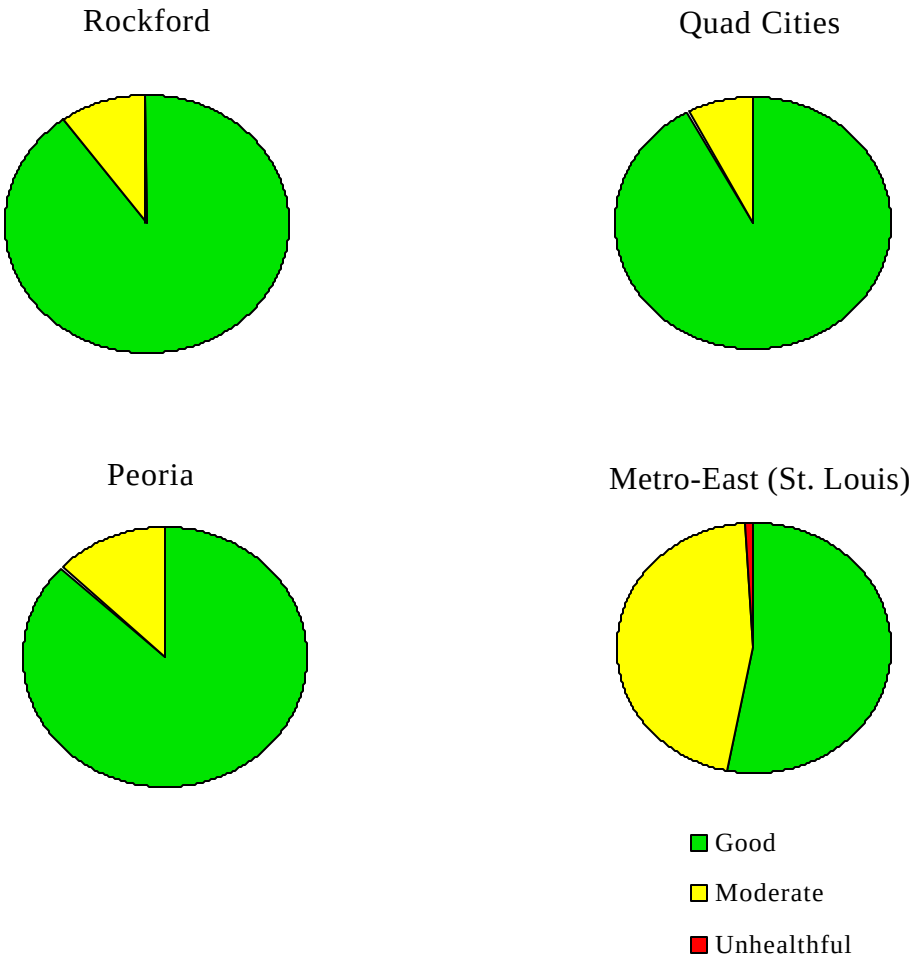


Figure 9: 1999 Pollutant Standards Index Summaries by Sector



SECTION 4: STATEWIDE SUMMARY OF POINT SOURCE EMISSIONS

Since the late 1970's, the Division of Air Pollution Control has maintained a database of stationary point source emissions for the entire State. 40 CFR 51.211 requires Illinois to include in its State Implementation Plan "... procedures for requiring owners or operators of stationary sources to maintain records of... a) Information on the nature and amount of emissions from the stationary source and b) other information as may be necessary..." The emission database maintained by the Division of Air Pollution Control was originally called the Total Air System (TAS). Updates to the database were made through batch transactions every two weeks. In June 1989, the TAS was replaced with an on-line system known as the Emission Inventory System (EIS). Very few new data items to be stored were added when the Division switched to the EIS. The change was mainly to get to an on-line system and to enhance the structure of the database to make it more flexible.

In March, 1999, the Bureau of Air introduced a new emission inventory system known as ISSIS (Illinois Stationary Source Inventory System). This new inventory system, which was developed in Oracle, built upon the structure of the annual emission reporting system (CAERS - Computerized Annual Emission Reporting System) previously developed. Up until then, inventory data resided both in EIS and CAERS. Data from EIS was loaded annually into CAERS. ISSIS did away with this requirement. Now inventory data resides in one database.

ISSIS currently includes emission data on approximately 8,000 active sources throughout the State. The EIS data includes source addresses, source emission totals, permit data such as expiration date and status, emission unit data such as name, hours of operation, operating rate, fuel parameters and emissions, control equipment data such as control device name, type and removal efficiencies, and stack parameters. Reported emissions and Agency calculated emissions are stored separately.

Also in March, 1999, the group responsible for the entry of emission inventory data was switched from the Permit Section to the Inventory Unit of the Compliance and Systems Management Section. The Inventory Unit uses permit applications, the issued permit and data reported on annual emission reports to compile the inventory.

The following tables and graphs are an analysis of the emissions data contained in ISSIS at the end of 1999. It is important to note emissions contained in the ISSIS are not necessarily the actual emissions that entered the atmosphere. This is due to the fact that when an air pollution permit is applied for, the applicant provides maximum and average emission rates. The maximum emission rate reflects what the applicant believes the emission rate would be at maximum production. The average emission rate reflects emissions at the applicant's most probable production rate. In the future, more and more reported data will be incorporated into the inventory.

To calculate the distribution of emissions for the individual categories, the source classification code (SCC) field was used from the ISSIS. The SCC is an eight digit code that breaks emission units into logical categories. SCCs are provided by the USEPA and are included in the Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS). Currently there are approximately 7,000 of these SCCs.

To produce the following tables, the first three digits of the SCC were used. Only categories that contributed significantly to the overall total are listed in the following sections. The complete category breakdown can be found in **Appendix D**.

VOLATILE ORGANIC MATERIAL

Figure 10
Volatile Organic Material
Emission Trend (1000's of Tons/Year)

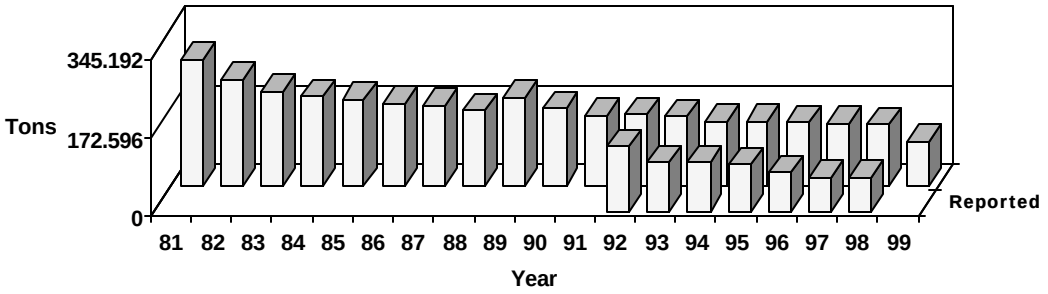


Table 5: Distribution of Volatile Organic Material Emissions - 1999

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Surface Coating Operations	22,854.7	23.1%	23.1%
Chemical Manufacturing	13,515.1	13.6%	36.7%
Printing/Publishing	10,930.4	11.0%	47.7%
Food/Agriculture	8,662.8	8.7%	56.5%
Fuel Combustion	7,256.3	7.3%	63.8%
Petroleum Industry	6,066.9	6.1%	69.9%
Petroleum Product Storage	5,805.0	5.9%	75.8%
Rubber and Plastic Products	4,543.1	4.6%	80.3%
Organic Solvent Evaporation	3,657.1	3.7%	84.0%
Primary Metal Production	3,089.0	3.1%	87.1%
Organic Solvent Use	1,784.5	1.8%	88.9%
Bulk Terminal/Plants	1,744.6	1.8%	90.7%
Fabricated Metal Products	1,446.5	1.5%	92.2%
Mineral Products	1,331.1	1.3%	93.5%
Secondary Metal Production	1,290.3	1.3%	94.8%
Petroleum Marketing/Transport	1,221.5	1.2%	96.0%
Organic Chemical Storage	771.3	0.8%	96.8%
All Other Categories	3,151.1	3.2%	100.0%

PARTICULATE MATTER

Figure 11
Particulate Emission Trend
(1000's of Tons/Year)

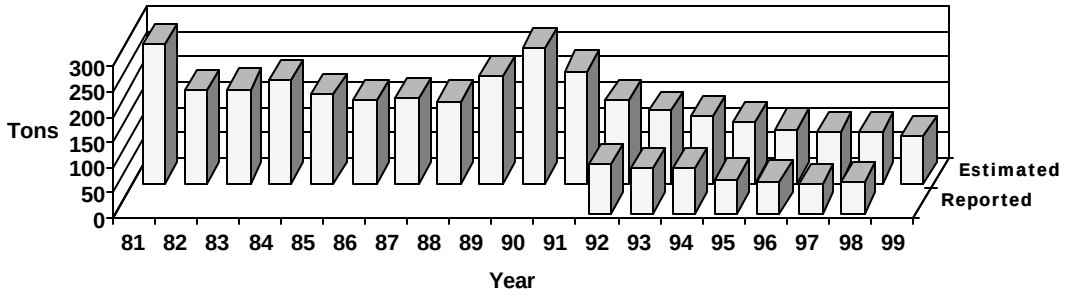


Table 6: Distribution of Particulate Matter Emissions - 1999

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	23,949.6	26.5%	26.5%
Mineral Products	20,767.2	23.0%	49.5%
Food/Agriculture	18,164.8	20.1%	69.6%
Secondary Metal Production	7,741.9	8.6%	78.2%
Primary Metal Production	6,460.6	7.2%	85.3%
Chemical Manufacturing	4,121.5	4.6%	89.9%
Petroleum Industry	2,929.3	3.2%	93.2%
Fabricated Metal Products	1,222.7	1.4%	94.5%
All Other Categories	4,958.8	5.5%	100.0%

CARBON MONOXIDE

Figure 12
Carbon Monoxide Emission Trend (1000's of Tons/Year)

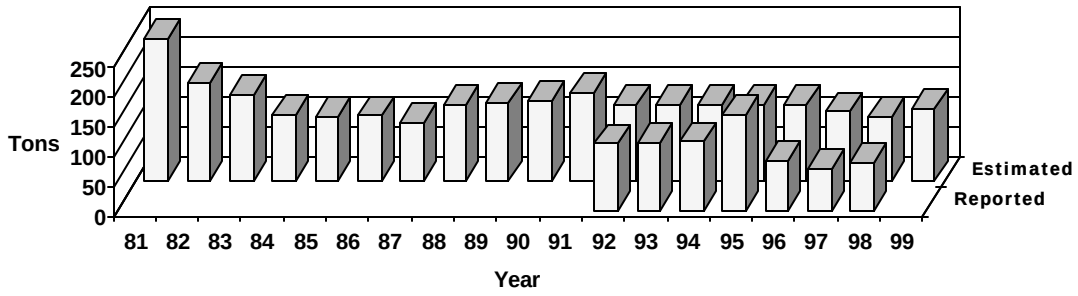


Table 7: Distribution of Carbon Monoxide Emissions - 1999

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Primary Metal Production	51,038.6	42.2%	42.2%
Fuel Combustion	40,035.7	33.1%	75.3%
Chemical Manufacturing	15,661.8	13.0%	88.3%
Solid Waste Disposal	4,718.4	3.9%	92.2%
Secondary Metal Production	2,755.8	2.3%	94.5%
Mineral Products	2,697.1	2.2%	96.7%
Petroleum Industry	1,620.5	1.3%	98.0%
Fabricated Metal Products	1,192.7	1.0%	99.0%
All Other Categories	1,185.3	1.0%	100.0%

SULFUR DIOXIDE

Figure 13
Sulfur Dioxide Emission
Trend (1000's of Tons/Year)

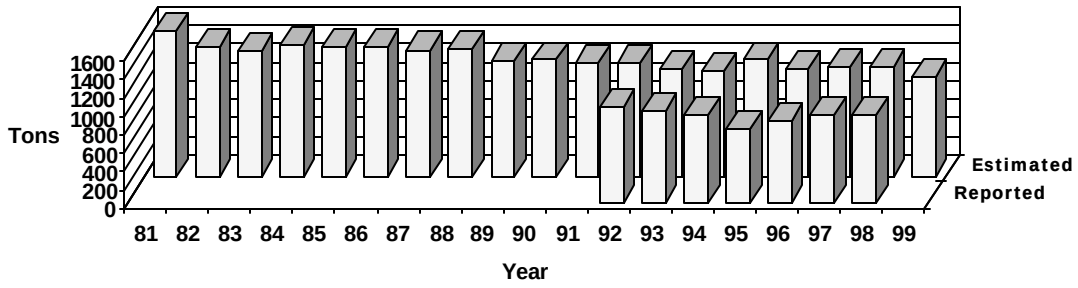


Table 8: Distribution of Sulfur Dioxide Emissions - 1999

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	956,175.6	88.1%	88.1%
Petroleum Industry	87,880.5	8.1%	96.2%
Chemical Manufacturing	16,470.5	1.5%	97.7%
Mineral Products	15,391.5	1.4%	99.1%
Primary Metal Production	4,301.2	0.4%	99.5%
Secondary Metal Production	3,682.0	0.3%	99.8%
All Other Categories	1,927.0	0.2	100.0%

NITROGEN OXIDES

Figure 14
Nitrogen Oxide Emission
Trend (1000's of Tons/Year)

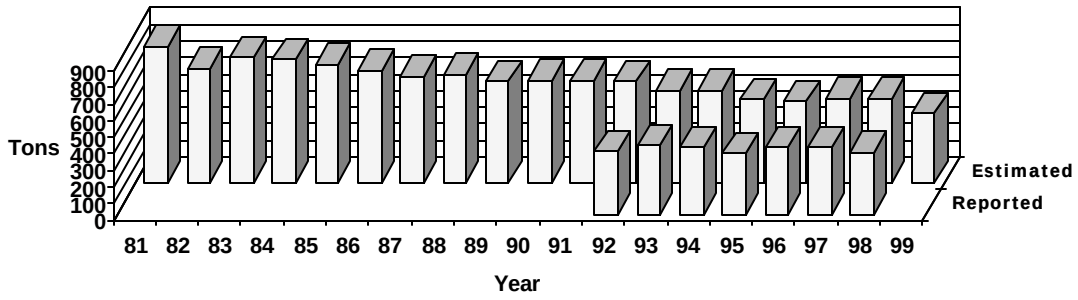


Table 9: Distribution of Nitrogen Oxide Emissions - 1999

Category	Estimated Emissions (tons)	Category Contribution	Cumulative Percent
Fuel Combustion	376,947.0	89.3%	89.3%
Petroleum Industry	20,695.3	4.9%	94.2%
Mineral Products	11,237.8	2.7%	96.9%
Primary Metal Production	4,611.4	1.1%	98.0%
Secondary Metal Production	2,308.0	0.5%	98.5%
Solid Waste Disposal	1,605.8	0.4%	98.9%
Chemical Manufacturing	1,570.1	0.4%	99.3%
Surface Coating Operations	1,080.0	0.3%	99.5%
All Other Categories	1,937.5	0.5%	100.0%

APPENDIX A
AIR SAMPLING NETWORK

DESCRIPTION OF THE AIR SAMPLING NETWORK

The Illinois air monitoring network is composed of instrumentation owned and operated by both the Illinois Environmental Protection Agency and by cooperating local agencies. A directory of local agencies within Illinois and the environmental agencies of adjacent states can be found in **Table A1**. This network has been designed to measure ambient air quality levels in the various Illinois Air Quality Control Regions (AQCR). Historically, each AQCR was classified on the basis of known air pollutant concentrations or, where these were not known, estimated air quality. A map of the AQCR's in Illinois and overlapping into surrounding states can be found at the end of this section.

Many local agencies and volunteers cooperate and support the operation of the Illinois air monitoring network. The network contains both continuous and intermittent instruments. The continuous instruments operate throughout the year, while noncontinuous instruments operate intermittently based on the schedule shown in **Table A2**. This is the official noncontinuous sampling schedule used by the Illinois EPA during 1999.

The Illinois network is deployed along the lines described in the Illinois State Implementation Plan. An updated air monitoring plan is submitted to USEPA each year for review. In accordance with USEPA air quality monitoring requirements as set forth in Title 40 of the Code of Federal Regulations, Part 58 (40 CFR 58), four types of monitoring stations are used to collect ambient air data. The types of stations are distinguished from one another on the basis of the general monitoring objectives they are designed to meet

The SLAMS /NAMS /PAMS/ SPMS designations for the sites operated within the State of Illinois are provided by site in the Site Directory (**Table A4**). All of the industrial sites are considered to be SPMS. **Table A3** is a summary of the distribution of SLAMS/NAMS/PAMS/SPMS by pollutant.

1. **State/Local Air Monitoring Station (SLAMS) Network** - The SLAMS network is designed to meet a minimum of four basis monitoring objectives:

   a. To determine the highest concentrations expected to occur in the area covered by the network.

   b. To determine representative concentrations in areas of high population density.

   c. To determine the air quality impact of significant sources or source categories.

   d. To determine general background concentration levels.

2. **National Air Monitoring Station (NAMS) Network** - The NAMS network is a subset of stations selected from the SLAMS network with emphasis given to urban and multisource areas. The primary objectives of the NAMS network are:

   a. To measure expected maximum concentrations.

TABLE A1

DIRECTORY OF REGIONAL AIR POLLUTION AGENCIES

Chicago Department of the
Environment
30 N. LaSalle Street, 25th Floor
Chicago, Illinois 60602
312/744-7606
Fax 312/744-6451

Cook County Department of
Environmental Control
1500 Maybrook Drive, Room 202
Maywood, Illinois 60153
708/865-6165
Fax 708/865-6361

Indiana Dept. of Environmental Management
100 N. Senate
Indianapolis, Indiana 46204
317/232-8611
Fax 317/233-6647

Iowa Dept. of Natural Resources
Wallace State Office Building
900 E. Grand Ave.
Des Moines, Iowa 50319-0034
515/281-5145
Fax 515/281-8895

Kentucky Dept. for Environmental
Protection
Air Quality Division
803 Schenkel Lane
Frankfort, Kentucky 40601
502/573-3382
Fax 502/573-3787

Michigan Dept. of Natural Resources
Air Quality Division
P.O. Box 30260
Lansing, Michigan 48909
517/373-7023
Fax 517/373-1265

Missouri Dept. of Natural Resources
Division of Environmental Quality
P.O. Box 176
205 Jefferson Street
Jefferson City, Missouri 65102
573/751-4817
Fax 573/751-2706

Wisconsin Dept. of Natural Resources
Bureau of Air Management
P.O. Box 7921
101 S. Webster
Madison, Wisconsin 53707
608/266-7718
Fax 608/267-0560

TABLE A2

1999 - Noncontinous Sampling Schedule

January

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

15 Every 6 Day Sampling Schedule 18 Every 3 Day Sampling Schedule

b. To measure concentrations in areas where poor air quality is combined with high population exposure.

c. To provide data useable for the determination of national trends.

d. To provide data necessary to allow the development of nationwide control strategies.

3. Photochemical Assessment Monitoring Station (PAMS) Network - The PAMS network is required in serious, severe, and extreme ozone non-attainment areas to obtain detailed data for ozone, precursors (NOx and VOC), and meteorology. VOC and NOx sampling is required for the period June - August each year. Ozone sampling occurs during the ozone season, April - October. Network design is based on four monitoring types. In Illinois PAMS are required in the Chicago metropolitan area only.

a. Type 1 sites are located upwind of the non-attainment area and are located to measure background levels of ozone and precursors coming into the area

b. Type 2 sites are located slightly downwind of the major source areas of ozone precursors.

c. Type 3 sites are located at the area of maximum ozone concentrations.

d. Type 4 sites are located at the domain edge of the non-attainment area and measure ozone and precursors leaving the area.

4. Special Purpose Monitoring Station (SPMS) Network - Any monitoring site that is not a designated SLAMS or NAMS is considered a special purpose monitoring station. Some of the SPMS network objectives are as follows:

a. To provide data as a supplement to stations used in developing local control strategies, including enforcement actions.

b. To verify the maintenance of ambient standards in areas not covered by the SLAMS/NAMS network.

c. To provide data on noncriteria pollutants.

Table A3

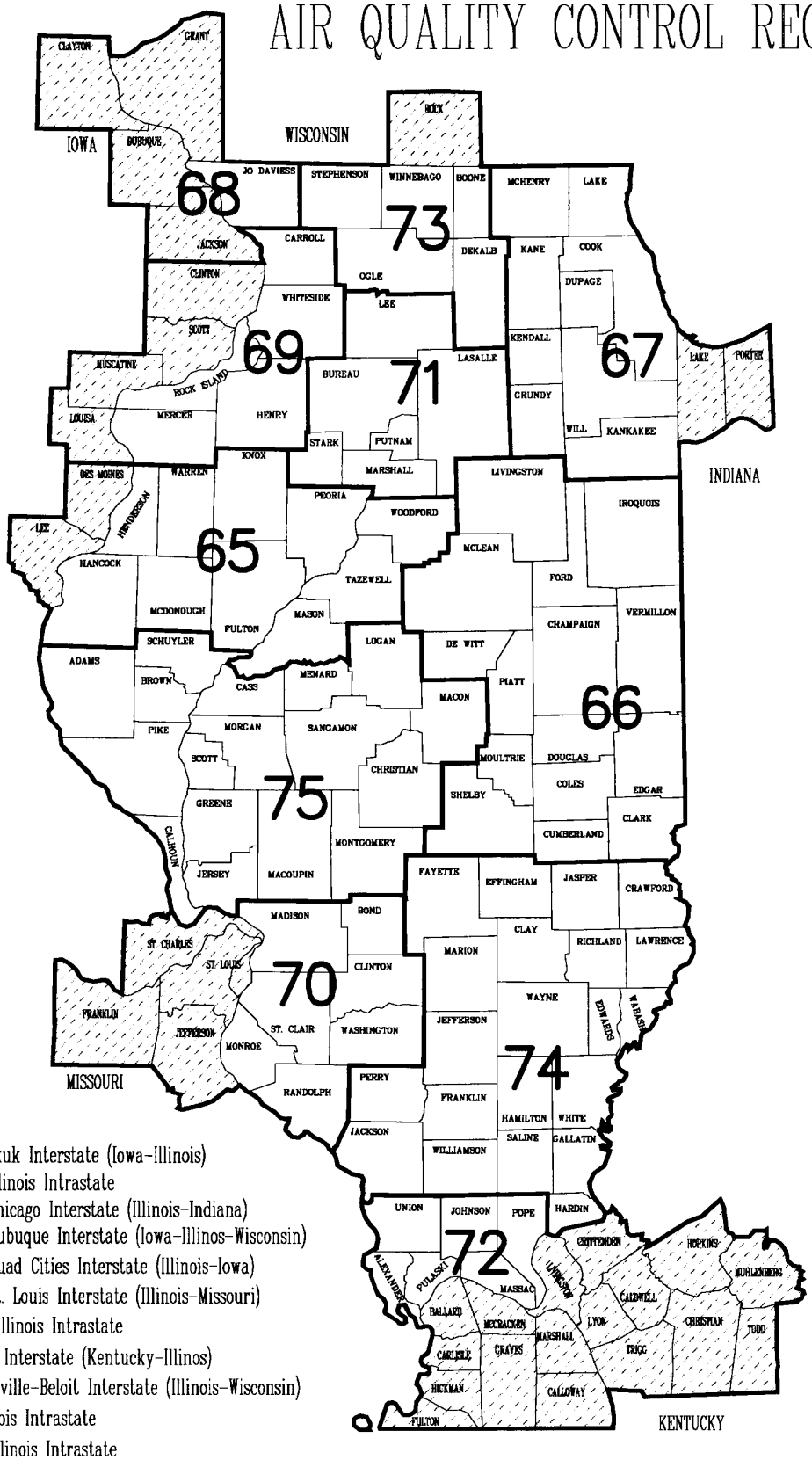
DISTRIBUTION OF AIR MONITORING INSTRUMENTS

	PAMS	NAMS	SLAMS	SPMS	TOTAL
Particulate Matter (PM_{10})	0	12	11	1	24
Total Suspended Particulates (TSP)	0	0	0	11	11
Particulate Matter ($PM_{2.5}$)	0	0	25	3	28
Lead	0	2	10	3	15
Sulfur Dioxide	0	12	15	2	29
Nitrogen Dioxide	4	2	5	0	11
Ozone	4	11	26	2	43
Carbon Monoxide	0	2	8	0	10
Volatile Organic Compounds	4	0	0	0	4
Wind Systems	4	0	0	22	26
Solar Radiation	4	0	0	6	10
Meteorological	4	0	0	0	4
Total	24	41	100	50	215

There were several changes to the monitoring network from 1998 to 1999. Major changes in the particulate network occurred at the end of 1998. A total of 19 PM_{10} sites were discontinued as part of the development of the $PM_{2.5}$ network. However a total of 25 $PM_{2.5}$ sites were implemented in the first phase of the $PM_{2.5}$ network implementation. Additionally eight lead sites were discontinued because of the success of lead reduction efforts resulted in less emphasis on traffic-oriented lead. The second phase of the $PM_{2.5}$ network implementation occurred at the end of 1999 with additional reductions in PM_{10} sites.

A map depicting the locations of the Statewide air monitoring network sites follows the AQCR map.

AIR QUALITY CONTROL REGIONS



65 - Bulington-Keokuk Interstate (Iowa-Illinois)
66 - East Central Illinois Intrastate
67 - Metropolitan Chicago Interstate (Illinois-Indiana)
68 - Metropolitan Dubuque Interstate (Iowa-Illinos-Wisconsin)
69 - Metropolitan Quad Cities Interstate (Illinois-Iowa)
70 - Metropolitan St. Louis Interstate (Illinois-Missouri)
71 - North Central Illinois Intrastate
72 - Paducah-Cairo Interstate (Kentucky-Illinos)
73 - Rockford-Janesville-Beloit Interstate (Illinois-Wisconsin)
74 - Southeast Illinois Intrastate
75 - West Central Illinois Intrastate

Statewide Map of Air Monitoring Locations

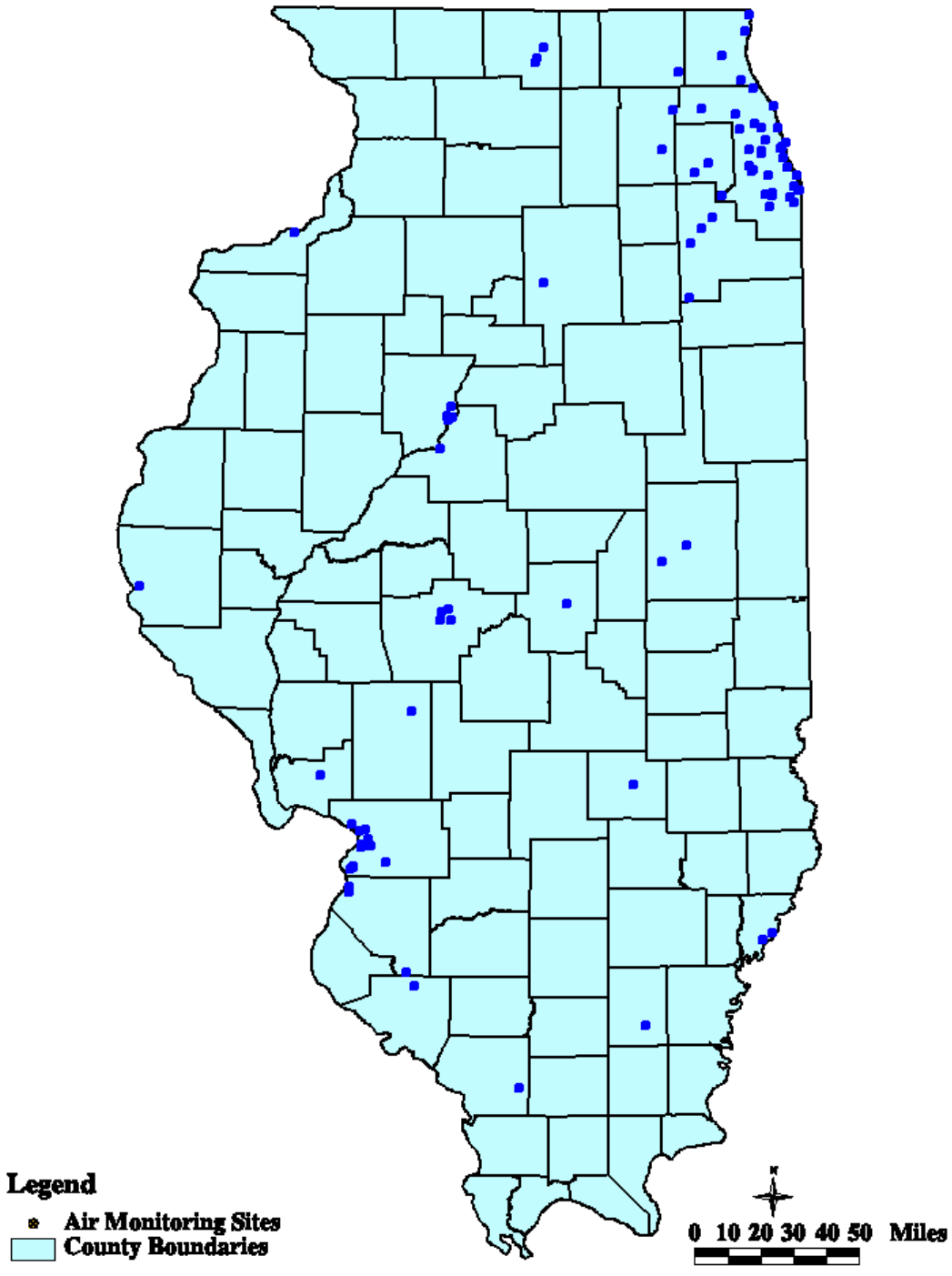


Table A4

1999
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)				
PEORIA COUNTY				
Peoria	Fire Station #8	Ill. EPA	N. 4507.050	NAMS - SO_2, O_3
(1430024)	MacArthur & Hurlburt		E. 279.679	SPMS - WS/WD
Peoria	Commercial Building	Ill. EPA	N. 4508.585	SLAMS - CO
(1430036)	1005 N. University		E. 279.196	
Peoria	City Office Building	Ill. EPA	N. 4508.197	NAMS - PM_{10}
(1430037)	613 N.E. Jefferson		E. 281.675	SLAMS - Pb, $PM_{2.5}{}^{n}$
				SPMS - TSP
Peoria Heights	Peoria Heights H.S.	Ill. EPA	N. 4513.476	NAMS - O_3
(1431001)	508 E. Glen Ave.		E. 281.660	
TAZEWELL COUNTY				
Pekin	Fire Station #3	Ill. EPA	N. 4492.693	NAMS - SO_2
(1790004)	272 Derby		E. 275.291	
66 EAST CENTRAL ILLINOIS INTRASTATE				
CHAMPAIGN COUNTY				
Bondville (NEW)	SWS Climate Station	Ill. EPA/SWS	N. 4434.201	SLAMS - $PM_{2.5}$
(0191001)	Twp. rd. 500 E.		E. 382.959	
Champaign	Booker T. Washington Elem. Sch.	Ill. EPA	N. 4442.017	SLAMS - SO_2, O_3
(0190004)	606 E. Grove		E. 395.248	
Champaign (DISC)	Post Office	Ill. EPA	N. 4441.819	SLAMS - PM_{10}
(0190005)	600 N. Neil		E. 394.066	
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)				
COOK COUNTY				
Alsip	Village Garage	Cook County DEC	N. 4613.287	SLAMS - O_3, Pb, PM_{10}
(0310001)	4500 W. 123rd St.		E. 439.015	SPMS - TSP, WS/WD, $PM_{2.5}$
Bedford Park	APC Laboratory	Cook County DEC	N. 4624.760	SLAMS - SO_2
(0311018)	7800 W. 65th St.		E. 432.241	SPMS - WS/WD
Blue Island	Eisenhower H.S.	Cook County DEC	N. 4612.286	NAMS - PM_{10}
(0312001)	12700 Sacramento		E. 442.003	SLAMS - SO_2, $PM_{2.5}$

Table A4

1999
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Calumet City (0318003)	Trailer 1703 State St.	Cook County DEC	N. 4608.775 E. 452.673	SLAMS - SO_2, NO/NO_2, O_3, CO
Chicago (0310060)	Carver H.S. 13100 S. Doty	Cook County DEC	N. 4611.597 E. 451.007	NAMS - PM_{10}
Chicago (0310026)	Cermak Pump Sta. 735 W. Harrison	Cook County DEC	N. 4635.707 E. 446.469	SLAMS - Pb SPMS - TSP
Chicago (DISC) (0310049)	Chicago Ave. Pumping Sta. 805 N. Michigan	Cook County DEC	N. 4638.335 E. 448.269	NAMS - PM_{10}
Chicago (0310063)	CTA Building 320 S. Franklin	Ill. EPA	N. 4636.096 E. 447.365	NAMS - CO, NO/NO_2, SO2 SLAMS - O_3
Chicago (0310014)	Farr Dormitory 3300 S. Michigan Ave.	Cook County DEC	N. 4631.393 E. 448.232	SLAMS - $PM_{2.5}{}^n$
Chicago (0310072)	Jardine Water Plant 1000 E. Ohio	Ill. EPA	N. 4638.169 E. 449.597	PAMS - NO/NO_2, O_3, VOC WS/WD, SOL, MET, UV, RA IN
Chicago (0310052)	Mayfair Pump Sta. 4850 Wilson Ave.	Cook County DEC	N. 4645.900 E. 437.878	NAMS - Pb SLAMS - $PM_{2.5}$ SPMS - TSP
Chicago (0310042)	Sears Tower Wacker @ Adams	Ill. EPA	N. 4636.320 E. 447.265	SPMS - O_3
Chicago (0310050)	Southeast Police Sta. 103rd & Luella	Cook County DEC	N. 4617.220 E. 452.700	NAMS - SO_2 SLAMS - O_3, $PM_{2.5}{}^n$
Chicago (0310032)	South Water Filtration Plant 3300 E. Cheltenham Pl.	Cook County DEC	N. 4622.596 E. 454.663	SLAMS - O_3
Chicago (0311003)	Taft H.S. 6545 W. Hurlbut St.	Cook County DEC	N. 4648.125 E. 434.392	SLAMS - O_3
Chicago (0310075)	Truman College 1145 W. Wilson	Cook County DEC	N. 4645.802 E. 445.417	SLAMS - O_3, NO/NO_2
Chicago (0310064)	University of Chicago 5720 S. Ellis Ave.	Cook County DEC	N. 4626.508 E. 450.010	SLAMS - O_3, NO/NO_2 SPMS - SOL, UV
Chicago (0310022)	Washington H.S. 3535 E. 114th St.	Cook County DEC	N. 4615.038 E. 455.155	SLAMS - Pb, $PM_{2.5}$ SPMS - TSP

Table A4

1999
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Chicago (0310059)	Washington Elem. Sch. 3611 E. 114th St.	Ill. EPA	N. 4615.013 E. 455.389	NAMS - SO_2 SLAMS - PM_{10} SPMS - WS/WD
Cicero (DISC) (0316001)	Roosevelt H.S. 15th St. & 50th Ave.	Cook County DEC	N. 4634.246 E. 437.728	NAMS - PM_{10}
Cicero (0314002)	Trailer 1820 S. 51st Ave.	Cook County DEC	N. 4633.763 E. 437.541	NAMS - SO_2, NO/NO_2 SLAMS - O_3, CO
Des Plaines (0314006)	Forest Elem. Sch. 1375 5th St.	Cook County DEC	N. 4653.049 E. 425.055	SLAMS - O_3, $PM_{2.5}^n$
Evanston (0317002)	Water Pumping Sta. 531 E. Lincoln	Ill. EPA	N. 4656.695 E. 444.260	NAMS - O_3 SPMS - WS/WD
Hoffman Estates (0314101)	Hoffman Estates H.S. 1100 W. Higgins Rd.	Cook County DEC	N. 4656.069 E. 408.304	SLAMS - PM_{10}
Lemont (0311601)	Trailer 729 Houston	Cook County DEC	N. 4613.184 E. 417.532	SLAMS - SO_2, O_3
Lyons (DISC) (0311701)	Fire Station #22 4043 Joliet Ave.	Cook County DEC	N. 4629.580 E. 431.913	SLAMS - $PM_{2.5}^n$
Lyons Township (0311016)	Village Hall 50th St. & Glencoe	Ill. EPA	N. 4627.820 E. 430.886	SLAMS - PM_{10}, $PM_{2.5}$
Maywood (0316003)	Maybrook Civic Center 1500 Maybrook Dr.	Cook County DEC	N. 4635.705 E. 431.435	NAMS - Pb
Maywood (0316004)	Maybrook Civic Center 1505 S. First Ave.	Cook County DEC	N. 4635.695 E. 431.200	NAMS - CO
Merrionette Park (0311019)	Meadow Lane Sch. 1800 Meadow Lane Dr.	Cook County DEC	N. 4614.060 E. 441.949	SLAMS - PM_{10} SPMS - $PM_{2.5}$
Midlothian (0311901)	Bremen High Sch. 15205 Crawford Ave.	Cook County DEC	N. 4607.103 E. 440.416	SLAMS - PM_{10} SPMS - $PM_{2.5}$
Northbrook (0314201)	Northbrook Water Plant 750 Dundee Rd.	Ill. EPA	N. 4665.543 E. 434.140	PAMS - O_3, NO/NO_2, VOC WS/WD, SOL, MET SLAMS - $PM_{2.5}^n$
Schiller Park (0313103)	IEPA Trailer 4743 Mannheim Rd.	Ill. EPA	N. 4646.130 E. 427.377	SLAMS - CO, NO/NO_2, Pb SPMS - TSP, WS/WD

Table A4

1999
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
COOK COUNTY				
Summit	Graves Elem. Sch.	Cook County DEC	N. 4625.756	SLAMS - PM_{10}, Pb, $PM_{2.5}^{n}$
(0313301)	60th St. & 74th Ave.		E. 433.074	SPMS - TSP
DUPAGE COUNTY				
Lisle	Morton Arboretum	Ill. EPA	N. 4629.361	SLAMS - SO_2, O_3
(0436001)	Route 53		E. 410.891	SPMS - WS/WD
Naperville	City Hall	Ill. EPA	N. 4624.841	SLAMS - $PM_{2.5}^{n}$
(0434002)	400 S. Eagle St.		E. 404.230	
KANE COUNTY				
Elgin	Larsen Junior H.S.	Ill. EPA	N. 4655.844	NAMS - O_3
(0890005)	665 Dundee Rd.		E. 394.654	
Geneva	Delnor Comm. Hosp.	Ill. EPA/	N. 4636.982	SPMS - PM_{10}
(0892001)	300 Randall Rd.	Kane Co. Health Dept.	E. 388.691	
LAKE COUNTY				
Deerfield	Woodland Park Sch.	Ill. EPA	N. 4669.608	NAMS - O_3
(0970001)	1321 Wilmont Rd.		E. 428.584	
Libertyville	Butterfield Elem. Sch.	Ill. EPA	N. 4682.279	SLAMS - O_3
(0973001)	1441 Lake St.		E. 419.062	SPMS - WS/WD
Waukegan	North Fire Station	Ill. EPA	N. 4693.854	NAMS - O_3
(0971002)	Golf & Jackson Sts.		E. 430.744	SPMS - WS/WD
Zion	Camp Logan	Ill. EPA	N. 4701.735	PAMS - O_3, NO/NO_2, VOC
(0971007)	Illinois Beach State Park		E. 433.384	WS/WD, SOL, MET
Mc HENRY COUNTY				
Cary	Cary Grove H.S.	Ill. EPA	N. 4674.862	NAMS - O_3
(1110001)	1st St. & Three Oaks Rd.		E. 397.562	
WILL COUNTY				
Braidwood	Com Ed Training Center	Ill. EPA	N. 4563.890	PAMS - O_3, NO/NO_2, VOC
(1971011)	36400 S. Essex Road		E. 400.198	WS/WD, SOL, MET
				SLAMS - CO, $PM_{2.5}^{n}$
Joliet	Pershing Elem. Sch.	Ill. EPA	N. 4597.636	NAMS - PM10
(1971002)	Midland & Campbell Sts.		E. 406.854	SLAMS - $PM_{2.5}^{n}$
Joliet	Water Plant West	Ill. EPA	N. 4590.279	NAMS - SO_2
(1970013)	Rte. 6 & Young Rd.		E. 401.284	SPMS - WS/WD
South Lockport	Fitness Forum	Ill. EPA	N. 4603.045	SLAMS - O_3
(1971008)	2021 Lawrence		E. 412.075	

Table A4

1999
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)				
ROCK ISLAND COUNTY				
Moline	Water Treatment Plant	Ill. EPA	N. 4598.361	NAMS - SO_2, O_3
(1610003)	30 18th St.		E. 707.461	SLAMS - $PM_{2.5}^{n}$
				SPMS - WS/WD, SOL
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)				
MADISON COUNTY				
Alton	Clara Barton Elem. Sch.	Ill. EPA	N. 4308.245	SLAMS - SO_2, O_3, PM_{10}^{d}
(1190008)	409 Main St.		E. 747.375	SPMS - WS/WD
Edwardsville	RAPS Trailer	Ill. EPA	N. 4297.793	SLAMS - O_3
(1192007)	Poag Road		E. 757.118	SPMS - WS/WD, SOL
Granite City	Fire Station #1	Ill. EPA	N. 4287.661	SLAMS - $PM_{2.5}^{n}$
(1191007)	23rd & Madison		E. 748.745	
Granite City	Air Products	Ill. EPA	N. 4286.516	NAMS - PM_{10}
(1190010)	15th & Madison		E. 747.561	SLAMS - Pb
				SPMS - TSP
Granite City	YMCA Building	Ill. EPA	N. 4287.364	SLAMS - CO, SO_2
(1190017)	2001 Edison		E. 747.923	
Granite City	VFW Building	Ill.EPA	N. 4287.099	NAMS - PM_{10}
(1190023)	2040 Washington		E. 748.427	SLAMS - $PM_{2.5}^{n}$
Maryville	Southwest Cable TV	Ill. EPA	N. 4290.389	SLAMS - O_3
(1191009)	200 W. Division		E. 242.739	SPMS - WS/WD
South Roxana	S. Roxana Grade Sch.	Ill. EPA	N. 4301.635	SLAMS - SO_2
(1191010)	Michigan St.		E. 755.442	
Wood River	Water Treatment Plant	Ill. EPA	N. 4305.084	NAMS - SO_2, O_3, PM_{10}
(1193007)	54 N. Walcott		E. 751.138	SLAMS - Pb, $PM_{2.5}$
				SPMS - TSP
Wood River	VIM Test Station	Ill. EPA	N. 4305.709	SLAMS - SO_2
(1193009)	1710 Vaughn Road		E. 754.190	
Rural Madison County	Chemetco	Chemetco	N. 4297.892	SPMS - Pb
(1191013)	Site 2-E		E. 752.506	

Table A4

1999
SITE DIRECTORY

CITY NAME AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
MADISON COUNTY				
Rural Madison County (1191015)	Chemetco Site 4-SE	Chemetco	N. 4297.470 E. 752.268	SPMS - Pb
Rural Madison County (1191016)	Chemetco Site 5-N	Chemetco	N. 4298.370 E. 751.935	SPMS - Pb
RANDOLPH COUNTY				
Houston (1570001)	Baldwin Site #2 County Rds. 25.0 N. & 23.5 E.	Ill. EPA	N. 4228.843 E. 255.741	SLAMS - SO_2, O_3, $PM_{2.5}^n$
ST. CLAIR COUNTY				
East St. Louis (1630010)	RAPS Trailer 13th & Tudor	Ill. EPA	N. 4277.363 E. 747.251	NAMS - SO_2, PM_{10} SLAMS - NO/NO_2, Pb, O_3, $PM_{2.5}^n$ SPMS - TSP, WS/WD
Marissa (1631011)	Baldwin Site #1 Risdon School Rd.	Ill. EPA	N. 4235.505 E. 251.259	SLAMS - SO_2 SPMS - WS/WD
Sauget (1631010)	IEPA Trailer Little Ave.	Ill. EPA	N. 4275.123 E. 746.921	SLAMS - SO_2
71 NORTH CENTRAL ILLINOIS INTRASTATE				
LA SALLE COUNTY				
Oglesby (0990007)	308 Portland Ave.	Ill. EPA	N. 4573.105 E. 328.412	SLAMS - PM_{10} SPMS - WS/WD
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)				
WINNEBAGO COUNTY				
Loves Park (2012001)	Maple Elem. Sch. 1405 Maple Ave.	Ill. EPA	N. 4688.756 E. 332.098	NAMS - O_3 SPMS - WS/WD, SOL
Rockford (2010009)	Walker Elem. Sch. 1500 Post St.	Ill. EPA	N. 4683.537 E. 328.760	NAMS - O_3
Rockford (2010010)	Fire Dept. Administration Bldg. 204 S. 1st St.	Ill. EPA / Winn. Co. Hlth. Dept.	N. 4681.324 E. 327.670	SLAMS - $PM_{2.5}^n$
Rockford (2010011)	City Hall 425 E. State	Ill. EPA	N. 4681.390 E. 327.817	SLAMS - CO

Table A4

1999
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
74 SOUTHEAST ILLINOIS INTRASTATE				
EFFINGHAM COUNTY				
Effingham	Central Junior H.S.	Ill. EPA	N. 4325.131	SLAMS - O_3
(0491001)	Route 45 South		E. 366.053	SPMS - WS/WD, SOL
HAMILTON COUNTY				
Dale	Dale Elem. School	Ill. EPA	N. 4206.378	SPMS - O_3
(0650001)	SR 142		E. 368.939	
JACKSON COUNTY				
Carbondale	Maintenance Bldg.	Ill. EPA	N. 4177.177	SLAMS - PM_{10}
(0770004)	607 E. College	SIU	E. 305.348	
WABASH COUNTY				
Mount Carmel	Division St.	Public Service	N. 4249.965	SPMS - SO_2
(1850001)		of Indiana	E. 432.444	
Rural Wabash County	South of SR-1	Public Service	N. 4246.929	SPMS - SO_2
(1851001)		of Indiana	E. 427.104	
75 WEST CENTRAL ILLINOIS INTRASTATE				
ADAMS COUNTY				
Quincy	St. Boniface Elem. Sch.	Ill. EPA /	N. 4421.290	SLAMS - $PM_{10}{}^{d}$, SO_2, O_3
(0010006)	732 Hampshire	City (PM_{10})	E. 636.353	SPMS - WS/WD
JERSEY COUNTY				
Jerseyville	Illini Jr. H.S.	Ill. EPA	N. 4332.169	SLAMS - O_3
(0831001)	Liberty St. & County Rd.		E. 730.997	
MACON COUNTY				
Decatur	IEPA Trailer	Ill. EPA	N. 4414.538	NAMS - SO_2
(1150013)	2200 N. 22nd		E. 335.308	SLAMS - O_3, $PM_{2.5}{}^{n}$
				SPMS - WS/WD
MACOUPIN COUNTY				
Nilwood	IEPA Trailer	Ill. EPA	N. 4364.287	SLAMS - O_3, SO_2, Pb,
(1170002)	Heaton & Dubois		E. 258.053	$PM_{2.5}{}^{nd}$
				SPMS - TSP, WS/WD, SOL
				CO_2, UV

Table A4

1999
SITE DIRECTORY

CITY NAME / AIRS CODE	ADDRESS	OWNER/ OPERATOR	UTM COORD. (km)	EQUIPMENT
SANGAMON COUNTY				
Springfield	Sewage Treatment Plant	Ill. EPA	N. 4408.650	NAMS - SO_2
(1670006)	3300 Mechanicsburg Rd.		E. 278.194	SPMS - WS/WD
Springfield	Federal Building	Ill. EPA	N. 4408.623	SLAMS - CO
(1670008)	6th St. & Monroe		E. 273.327	
Springfield	Public Health Warehouse	Ill. EPA	N. 4413.490	SLAMS - O_3
(1670010)	2875 N. Dirksen Pkwy.		E. 277.134	
Springfield	Agriculture Building	Ill. EPA	N. 4412.240	SLAMS - PM_{10}, $PM_{2.5}^{n}$
(1670012)	State Fair Grounds		E. 273.720	

Summary of Equipment Codes for the Site Directory

TSP	- Total Suspended Particulates
PM_{10}	- Particulate Matter (10 microns or smaller)
$PM_{2.5}$	Particulate Matter (2.5 microns or smaller)
SO_2	- Sulfur Dioxide
NO	- Nitric Oxide
NO_2	- Nitrogen Dioxide
CO	- Carbon Monoxide
CO_2	- Carbon Dioxide
O_3	- Ozone
Pb	- Lead
WS/WD	- Wind Speed and Wind Direction
SOL	- Total Solar Radiation
MET	- Temperature, Relative Humidity, Barometric Pressure
UV	- Ultra-violet Radiation
RAIN	- Rainfall
VOC	- Volatile Organic Compounds
(n)	- Instrument installed during 1998
(d)	- Instrument removed during 1998
NEW	- Site started during 1998
DISC	- Site discontinued during or at the end of 1998

SLAMS Designations

NAMS	- National Air Monitoring Site
PAMS	- Photochemical Assessment Monitoring Site
SLAMS	- State and Local Air Monitoring Site
SPMS	- Special Purpose Air Monitoring Site

UTM Coordinates

N.	- Northing Coordinate (in kilometers)
E.	- Easting Coordinate (in kilometers)

APPENDIX B
AIR QUALITY DATA SUMMARY TABLES

AIR QUALITY DATA INTERPRETATION

In order to provide a uniform procedure for determining whether a sufficient amount of air quality data has been collected by a sensor in a given time period (year, quarter, month, day, etc.) to accurately represent air quality during that time period, a minimum statistical selection criteria was developed.

In order to calculate an annual average for noncontinuous parameters, a minimum of 75% of the data that was scheduled to be collected must be available, i.e., 45 samples per year for an every-six-day schedule (total possible of 60 samples). Additionally, in order to have proper quarterly balance, each site on an every sixth day schedule should have at least 10 samples per calendar quarter. This provides for a 20% balance in each quarter if the minimum required annual sampling is achieved.

For lead results which must be compared to a quarterly standard, 75% of the possible samples in each quarter must be obtained. Thus for a valid lead quarterly average, a total of 12 values must be available.

PM_{10} and $PM_{2.5}$ samplers operate on one of three sampling frequencies:

- Every-day sampling (68 samples required each quarter for 75% data capture)
- Every-third-day sampling (23 samples required each quarter for 75% data capture)
- Every-six-day sampling (12 samples required each quarter for 75% data capture).

To calculate an annual PM_{10} or $PM_{2.5}$ mean, arithmetic means are calculated for each quarter in which valid data is recorded in at least 75% of the possible sampling periods. The annual mean is then the arithmetic average of the four quarterly means.

To determine an annual average for continuous data 75% of the total possible yearly observations are necessary, i.e., a minimum of 6570 hours (75% of the hours available) were needed in 1999. In order to provide a balance between the respective quarters, each quarter should have at least 1300 hours which is 20% of the 75% minimum annual requirement. To calculate quarterly averages at sites which do not meet the annual criteria, 75% of the total possible observations in a quarter are needed, i.e., a minimum of 1647 hours of 2200 hours available. Monthly averages also require 75% of the total possible observations in a month, i.e., 540 hours as a minimum. Additionally, for short-term running averages (24 hour, 8 hour, 3 hour) 75% of the data during the particular time period is needed, i.e, 18 hours for a 24-hour average, 6 hours for an 8-hour average and 3 hours for a 3-hour average.

For ozone, a valid day for 1-hour samples must have 75% of the hours between 9 a.m. and 9 p.m. otherwise it is considered missing. A missing day can be considered valid if the peak ozone concentration on the preceding and succeeding days is less than 0.090 ppm. The expected exceedences are actual exceedences adjusted for the percent of missing days. For 8-hour samples, running averages are computed for each hour which includes the next seven hours as well. A valid 8-hour average has at least 6 valid 1-hour averages. A valid 8-hour day contains at least 75% (18) of the possible 8-hour running averages. Complete sampling over a three year period requires an average of 90% valid days with each year having at least 75% valid days.

Data listed as not meeting the minimum statistical selection criteria in this report were so noted after evaluation using the criteria above. Although short term averages (3, 8, 24 hours) have been computed for certain sites not meeting the annual

criteria, these averages may not be representative of an entire year's air quality. In certain circumstances where even the 75% criteria is met, the number and/or magnitude of short term averages may not be directly comparable from one year to the next because of seasonal distributional differences.

For summary purposes, the data is expressed in the number of figures to which the raw data is validated. Extra figures may be carried in the averaging technique, but the result is rounded to the appropriate number of figures. For example, the values 9, 9, 10 are averaged to give 9; whereas the values 9.0, 9.0, 10.0 are averaged to 9.3. The raw data itself should not be expressed to more significant figures than the sensitivity of the monitoring methodology allows.

In comparing data to the various air quality standards, the data are implicitly rounded to the number of significant figures specified by that standard. For example, to exceed the 0.12 ppm hourly ozone standard, an hourly value must be 0.125 ppm or higher, to exceed the 9 ppm CO 8-hour standard, an 8-hour average must be 9.5 ppm or higher. Peak averages, though, will be expressed to the number of significant figures appropriate to that monitoring methodology.

National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO_2) and carbon monoxide (CO) have short-term standards for ambient air concentrations (24 hours or less) not to be exceeded more than once per year. Particulate Matter (PM_{10} and $PM_{2.5}$) have 24-hour standards which are a 3-year average of each year's 99^{th} and 98^{th} percentile values respectively. In the case of ozone, the expected number of exceedances (one hour per day greater than 0.12 ppm) may not average more than one per year in any period of three consecutive years. The 8-hour ozone standard is concentration based and as such is the average of the fourth highest value each year over a three year period. The standards are promulgated in this manner in order to protect the public from excessive levels in pollution both in terms of acute and chronic health effects.

The following data tables detail and summarize air quality in Illinois in 1999. The tables of short term exceedences list those sites which exceeded any of the short term primary standards (24 hours or less). The detailed data tables list averages and peak concentrations for all monitoring sites in Illinois.

Table B1

1999
OZONE IN EXCESS OF THE PRIMARY STANDARD OF ONE HOUR PER DAY GREATER THAN 0.12 PARTS PER MILLION

STATION	ADDRESS	DATE	MAXIMUM VALUE (PPM)
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)			
MADISON COUNTY			
Alton	409 Main St.	Sep 4	0.129
Wood River	54 N. Walcott	Sep 4	0.125
75 WEST CENTRAL ILLINOIS INTRASTATE			
JERSEY COUNTY			
Jerseyville	Liberty St.	Jul 25	0.139
		Aug 16	0.128
		Sep 2	0.127

Table B2

1999
OZONE

STATION	ADDRESS	VALID APR-OCT	NUMBER OF DAYS GREATER THAN 0.12 PPM	HIGHEST SAMPLES (parts per million) 1-HOUR 1ST	1-HOUR 2ND	1-HOUR 3RD	1-HOUR 4TH	8-HOUR 1ST	8-HOUR 2ND	8-HOUR 3RD	8-HOUR 4TH
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)											
PEORIA COUNTY											
Peoria	Hurlburt & MacArthur	206	0	0.105	0.099	0.095	0.092	0.092	0.088	0.087	0.082
Peoria Heights	508 E. Glen	212	0	0.097	0.097	0.092	0.087	0.088	0.085	0.085	0.082
66 EAST CENTRAL ILLINOIS INTRASTATE											
CHAMPAIGN COUNTY											
Champaign	606 E. Grove	211	0	0.111	0.108	0.100	0.100	0.098	0.094	0.094	0.094
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)											
COOK COUNTY											
Alsip	4500 W. 123rd St.	209	0	0.094	0.092	0.091	0.088	0.084	0.081	0.080	0.080
Calumet City	1703 State St.	207	0	0.091	0.091	0.088	0.087	0.083	0.081	0.081	0.079
Chicago - CTA	320 S. Franklin	214	0	0.099	0.097	0.094	0.094	0.090	0.087	0.085	0.082
Chicago - Jardine	1000 E. Ohio	208	0	0.107	0.100	0.098	0.096	0.094	0.091	0.091	0.085
Chicago - SWFP	3300 E Cheltenham	212	0	0.115	0.111	0.109	0.101	0.102	0.102	0.101	0.097
Chicago - SE Police	103rd & Luella	213	0	0.100	0.096	0.094	0.090	0.088	0.088	0.084	0.075
Chicago - Taft	6545 W. Hurlbut	212	0	0.095	0.094	0.094	0.091	0.083	0.083	0.081	0.080
Chicago - Truman	1145 W. Wilson	210	0	0.107	0.101	0.100	0.097	0.096	0.094	0.092	0.090
Chicago - University	5720 S. Ellis	214	0	0.106	0.100	0.099	0.093	0.093	0.091	0.090	0.088
Cicero	1830 S. 51st Ave.	211	0	0.101	0.098	0.097	0.093	0.087	0.084	0.083	0.079
Des Plaines	1375 5th St.	211	0	0.105	0.101	0.100	0.092	0.091	0.086	0.085	0.084
Evanston	531 Lincoln	201	0	0.106	0.106	0.105	0.100	0.096	0.093	0.092	0.091
Lemont	729 Houston	213	0	0.107	0.097	0.097	0.092	0.088	0.086	0.085	0.084
Northbrook	750 Dundee Rd.	206	0	0.108	0.103	0.100	0.100	0.095	0.093	0.091	0.088
DuPAGE COUNTY											
Lisle	Morton Arboretum	213	0	0.097	0.090	0.086	0.083	0.082	0.080	0.075	0.075
KANE COUNTY											
Elgin	665 Dundee	214	0	0.094	0.093	0.092	0.089	0.085	0.081	0.081	0.081
LAKE COUNTY											
Deerfield	1321 Wilmot Rd.	214	0	0.105	0.102	0.101	0.100	0.088	0.088	0.086	0.084
Libertyville	1441 Lake St.	213	0	0.106	0.104	0.101	0.097	0.087	0.086	0.086	0.083
Waukegan	Golf & Jackson	208	0	0.116	0.106	0.102	0.102	0.093	0.091	0.090	0.088
Zion	Camp Logan	213	0	0.112	0.106	0.103	0.103	0.091	0.091	0.087	0.086
McHENRY COUNTY											
Cary	1st St. & Three Oaks	206	0	0.119	0.104	0.102	0.101	0.100	0.094	0.091	0.090
WILL COUNTY											
Braidwood	36400 S. Essex Rd.	213	0	0.107	0.104	0.090	0.090	0.093	0.092	0.087	0.085
South Lockport	2021 Lawrence	214	0	0.110	0.091	0.091	0.091	0.093	0.085	0.083	0.083

Primary 1-Hour Standard 0.12 ppm; 8-Hour Standard 0.08 ppm

Table B2

1999
OZONE

STATION	ADDRESS	VALID APR-OCT	NUMBER OF DAYS GREATER THAN 0.12 PPM	HIGHEST SAMPLES (parts per million) 1-HOUR 1ST	2ND	3RD	4TH	8-HOUR 1ST	2ND	3RD	4TH
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)											
ROCK ISLAND COUNTY											
Moline	30 18th St.	211	0	0.092	0.090	0.089	0.088	0.083	0.079	0.076	0.074
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)											
MADISON COUNTY											
Alton	409 Main St.	213	1	0.129	0.118	0.118	0.112	0.100	0.097	0.096	0.090
Edwardsville	Poag Road	211	0	0.115	0.111	0.111	0.106	0.105	0.093	0.092	0.092
Maryville	200 W. Division	211	0	0.124	0.114	0.110	0.105	0.104	0.096	0.092	0.085
Wood River	54 N. Walcott	209	1	0.125	0.112	0.111	0.109	0.111	0.101	0.091	0.084
RANDOLPH COUNTY											
Houston	Twp Rds. 150 & 45	214	0	0.100	0.100	0.094	0.092	0.088	0.087	0.084	0.082
ST. CLAIR COUNTY											
East St. Louis	13th & Tudor	214	0	0.119	0.110	0.108	0.097	0.096	0.096	0.085	0.084
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)											
WINNEBAGO COUNTY											
Loves Park	1405 Maple	214	0	0.091	0.086	0.085	0.085	0.083	0.079	0.078	0.077
Rockford	1500 Post	211	0	0.096	0.093	0.092	0.089	0.085	0.084	0.082	0.082
74 SOUTHEAST ILLINOIS INTRASTATE											
EFFINGHAM COUNTY											
Effingham	Route 45 South	212	0	0.104	0.103	0.103	0.100	0.095	0.095	0.094	0.092
HAMILTON COUNTY											
Dale	Route 142	209	0	0.097	0.097	0.095	0.088	0.092	0.087	0.087	0.080
75 WEST CENTRAL ILLINOIS INTRASTATE											
ADAMS COUNTY											
Quincy	732 Hampshire	214	0	0.095	0.091	0.089	0.088	0.086	0.083	0.080	0.075
JERSEY COUNTY											
Jerseyville	Liberty St.	214	3	0.139	0.128	0.127	0.123	0.104	0.104	0.103	0.100
MACON COUNTY											
Decatur	2200 N. 22nd St.	213	0	0.104	0.102	0.096	0.096	0.091	0.088	0.087	0.087
MACOUPIN COUNTY											
Nilwood	Heaton & DuBois	211	0	0.104	0.101	0.098	0.097	0.092	0.089	0.086	0.085
SANGAMON COUNTY											
Springfield	2875 N. Dirksen	213	0	0.111	0.099	0.097	0.090	0.091	0.088	0.078	0.075

Primary 1-Hour Standard 0.12 ppm; 8-Hour Standard 0.08 ppm

Table B4

1999
PARTICULATE MATTER (PM_{10})
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	>150 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	6-day	55	0	62	52	45	43	23
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Champaign	600 N. Neil	6-day	57	0	49	47	42	41	23
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd St.	6-day	59	0	69	53	50	44	25
Blue Island	12700 Sacramento	6-day	59	0	77	67	59	57	30
Chicago - Carver	13100 S. Doty	6-day	59	0	81	75	56	56	32
Chicago - CAPS	805 N. Michigan Ave.	6-day	59	0	84	83	77	77	40
Chicago - Washington ES	3611 E. 114th St.	1-day	351	0	66	65	64	64	27
Cicero	15th St. & 50th Ave.	6-day	58	0	95	83	71	65	33
Hoffman Estates	1100 W. Higgins Rd.	6-day	55	0	72	60	58	50	25
Lyons Township	50th St. & Glencoe Ave.	1-day	364	0	130	125	113	105	36
Merrionette Park	1800 Meadow Lane Dr.	6-day	59	0	74	60	53	50	27
Midlothian	15205 Crawford Ave.	6-day	58	0	67	55	48	46	25
Summit	60th St. & 74th Ave.	6-day	59	0	79	64	63	58	34
KANE COUNTY									
Geneva	300 Randall Rd.	6-day	50	0	65	42	39	38	22
WILL COUNTY									
Joliet	Midland & Campbell Sts.	6-day	56	0	57	52	49	42	23
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	409 Main St.	6-day	54	0	64	59	55	52	28
Granite City	15th & Madison	6-day	59	0	75	67	65	55	31
Granite City	2040 Washington	1-day	327	0	119	118	117	114	44
Wood River	54 N. Walcott	6-day	58	0	62	58	52	43	26
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	6-day	59	0	91	77	72	69	32

Primary 24-Hour Standard 150 ug/m^3; Primary Annual Standard 50 ug/m^3

Table B4

1999
PARTICULATE MATTER (PM_{10})
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	NUMBER OF SAMPLES >150 ug/m^3	HIGHEST SAMPLES 1st	HIGHEST SAMPLES 2nd	HIGHEST SAMPLES 3rd	HIGHEST SAMPLES 4th	ANNUAL ARITHMETIC MEAN
71 NORTH CENTRAL ILLINOIS INTRASTATE									
LASALLE COUNTY									
Oglesby	308 Portland Ave.	1-day	364	0	150	149	94	84	28
74 SOUTHEAST ILLINOIS INTRASTATE									
JACKSON COUNTY									
Carbondale	607 E. College	6-day	54	0	54	54	41	39	22
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	6-day	56	0	54	45	38	37	21
SANGAMON COUNTY									
Springfield	State Fair Grounds	6-day	56	0	72	45	42	41	20

Primary 24-Hour Standard 150 ug/m^3; Primary Annual Standard 50 ug/m^3

Table B5

1999
SHORT-TERM TRENDS
PARTICULATE MATTER (PM_{10})

ANNUAL ARITHMETIC MEANS (ug/m^3)

STATION	ADDRESS	1994	1995	1996	1997	1998	1999
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	613 N.E. Jefferson	20	21	20	21	26	23
66 EAST CENTRAL ILLINOIS INTRASTATE							
CHAMPAIGN COUNTY							
Champaign	600 N. Neil	25	22	19	22	24	23
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	-	-	25	25	30	25
Blue Island	12700 Sacramento	36	31	30	28	33	30
Chicago - Carver	13100 S. Doty	36	36	31	31	58	32
Chicago - CAPS	805 N. Michigan Ave.	36	33	32	33	38	40
Chicago - Washington ES	3611 E. 114th St.	-	-	30	28	27	27
Cicero	15th St. & 50th Ave.	39	37	34	32	34	33
Hoffman Estates	1100 W. Higgins Rd.	-	27	22	21	26	25
Lyons Township	50th St. & Glencoe Ave.	46	37	36	34	35	36
Merrionette Park	1800 Meadow Lane Dr.	-		29	26	31	27
Midlothian	15205 Crawford Ave.	-	-	28	25	28	25
Summit	60th St. & 74th Ave.	42	39	34	37	35	34
KANE COUNTY							
Geneva	300 Randall Rd.	-	-	-	21	24	22
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)							
WILL COUNTY							
Joliet	Midland & Campbell Sts.	25	24	22	23	23	23
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Alton	409 Main St.	30	30	29	30	32	28
Granite City	15th & Madison	+	46	39	47	46	31
Granite City	2040 Washington	45	41	40	37	40	44
Wood River	54 N. Walcott	32	29	26	25	30	26
ST. CLAIR COUNTY							
East St. Louis	13th St. & Tudor Ave.	34	34	33	34	37	32

- Station not in operation during the year.
+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 50 ug/m^3

Table B5

1999
SHORT-TERM TRENDS
PARTICULATE MATTER (PM_{10})

ANNUAL ARITHMETIC MEANS (ug/m^3)

STATION	ADDRESS	1994	1995	1996	1997	1998	1999
71 NORTH CENTRAL ILLINOIS INTRASTATE							
LASALLE COUNTY							
Oglesby	308 Portland Ave.	35	31	29	28	29	28
74 SOUTHEAST ILLINOIS INTRASTATE							
JACKSON COUNTY							
Carbondale	607 E. College	20	24	19	22	23	22
75 WEST CENTRAL ILLINOIS INTRASTATE							
ADAMS COUNTY							
Quincy	732 Hampshire	25	23	21	20	22	21
SANGAMON COUNTY							
Springfield	State Fair Grounds	-	-	-	23	25	20

- Station not in operation during the year.
+ Did not meet minimum statistical selection criteria (See Appendix B.1).

Primary Annual Standard 50 ug/m^3

Table B6

1999
PARTICULATE MATTER FINE ($PM_{2.5}$)
(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	>65 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
65 BURLINGTON-KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	6-day	54	0	42.7	38.0	35.8	32.5	+
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Bondville	Twp. Rd. 500 E.	6-day	50	0	38.2	37.3	33.1	29.3	+
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Blue Island	12700 Sacramento	6-day	59	0	51.3	47.0	39.5	38.4	17.4
Chicago-Farr	3300 S. Michigan Ave.	6-day	56	0	50.0	43.9	42.9	39.2	18.0
Chicago-Mayfair	4850 Wilson Ave.	6-day	48	0	46.8	39.9	38.3	36.0	+
Chicago-SE Police	103rd & Luella	6-day	58	0	48.0	46.4	38.8	32.9	17.2
Chicago-Washington HS	3535 E. 114th St.	6-day	58	0	50.8	44.1	42.3	33.8	17.4
Des Plaines	1375 5th St.	6-day	53	0	46.8	37.8	32.5	28.8	+
Lyons Township	50th St. & Glencoe Ave.	6-day	58	0	55.9	54.1	48.1	42.5	21.8
Lyons	4043 Joliet Ave.	6-day	58	0	49.7	46.0	43.2	37.2	18.2
Northbrook	750 Dundee Road	6-day	59	0	45.7	43.0	30.7	29.3	15.5
Summit	60th St. & 74th Ave.	6-day	58	0	46.7	45.6	36.4	34.1	17.5
Du PAGE COUNTY									
Naperville	400 S. Eagle St.	6-day	54	0	41.5	32.1	29.2	28.9	15.6
WILL COUNTY									
Braidwood	36400 S. Essex Rd.	6-day	52	0	36.1	30.4	29.6	26.6	+
Joliet	Midland & Campbell	6-day	59	0	44.3	39.0	35.2	30.5	15.5
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Moline	30 18th St.	6-day	57	0	49.6	40.8	35.1	33.5	16.4

+ - Did not meet minimum statistical selection criteria (See Section B.1)

Primary 24-Hour Standard 65 ug/m^3; Primary Annual Standard 15.0 ug/m^3

Table B6

1999

PARTICULATE MATTER FINE ($PM_{2.5}$)

(micrograms per cubic meter)

STATION	ADDRESS	SAMPLING FREQUENCY	NUMBER OF SAMPLES TOTAL	NUMBER OF SAMPLES >65 ug/m^3	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite city	23rd & Madison	6-day	56	0	41.5	30.2	29.2	28.9	+
Granite City	2040 Washington	6-day	57	0	51.3	43.3	41.8	38.4	20.6
Wood River	54 N. Walcott	6-day	55	0	46.3	43.1	30.1	29.6	15.7
RANDOLPH COUNTY									
Houston	Twp Rds. 150 & 45	6-dya	57	0	41.5	33.7	31.3	25.0	14.5
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	6-day	57	0	51.2	44.9	44.2	35.5	17.9
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)									
WINNEBAGO COUNTY									
Rockford	204 S. 1st St.	6-day	51	0	41.1	30.6	27.4	27.4	+
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACON COUNTY									
Decatur	2200 N. 22nd	6-day	49	0	42.7	33.4	30.4	30.1	+
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	6-day	58	0	41.8	37.6	32.0	31.5	16.0
SANGAMON COUNTY									
Springfield	State Fair Grounds	6-day	58	0	41.6	38.8	34.0	33.7	15.9

+ - Did not meet minimum statistical selection criteria (See Section B.1)

Primary 24-Hour Standard 65 ug/m^3; Primary Annual Standard 15.0 ug/m^3

Table B7

1999
CARBON MONOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	1-HR >35 PPM	8-HR >9 PPM	HIGHEST SAMPLES (ppm) 1-HOUR AVERAGE 1ST	2ND	3RD	8-HOUR AVERAGE 1ST	2ND	3RD
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)										
PEORIA COUNTY										
Peoria	1005 N. University	8550	0	0	7.9	7.2	6.9	5.4	4.6	4.4
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)										
COOK COUNTY										
Calumet City	1703 State St.	8504	0	0	5.2	5.1	4.9	4.5	3.3	2.9
Chicago - CTA Building	320 S. Franklin	8679	0	0	4.9	4.8	4.7	3.8	2.9	2.8
Cicero	1830 S. 51st Ave.	8684	0	0	6.8	6.4	5.8	5.1	3.7	3.1
Maywood	1505 S. First Ave	8513	0	0	6.8	6.2	6.2	5.1	4.9	4.7
Schiller Park	4743 N. Mannheim	8558	0	0	4.7	4.5	4.0	3.2	2.9	2.8
WILL COUNTY										
Braidwood	36400 S. Essex Rd.	8637	0	0	1.5	1.5	1.4	1.1	1.0	1.0
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)										
MADISON COUNTY										
Granite City	2001 Edison	8596	0	0	4.6	4.1	3.6	2.4	2.4	2.3
73 ROCKFORD - JANESVILLE - BELOIT INTERSTATE (IL - WI)										
WINNEBAGO COUNTY										
Rockford	425 E. State	8642	0	0	6.9	6.5	6.0	4.4	3.7	3.5
75 WEST CENTRAL ILLINOIS INTRASTATE										
SANGAMON COUNTY										
Springfield	6th & Monroe	8659	0	0	7.1	5.6	3.9	2.4	2.4	2.0

Primary 1-Hour Standard 35 ppm; Primary 8-Hour Standard 9 ppm

Table B8

1999
SULFUR DIOXIDE VALUES IN EXCESS OF THE 24-HOUR PRIMARY STANDARD OF 0.14 PPM OR THE 3-HOUR SECONDARY STANDARD OF 0.5 PPM

STATION	ADDRESS	DATE	AVERAGING TIME	NUMBER OF EXCURSIONS	TIME PERIOD	MAXIMUM AVERAGE
70 METROPOLITAN ST LOUIS INTERSTATE (IL - MO)						
ST CLAIR COUNTY						
Marissa	Risdon School Rd.	May 9	3-hour	1	1200-1500	0.567

Table B9

1999
SULFUR DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	3-HR > 0.5	24-HR > 0.14	HIGHEST SAMPLES 3-HR AVG. 1ST	3-HR AVG. 2ND	24-HR AVG. 1ST	24-HR AVG. 2ND	ANNUAL ARITHMETIC MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	Hurlburt & MacArthur	8635	0	0	0.149	0.146	0.045	0.040	0.007
TAZEWELL COUNTY									
Pekin	272 Derby	8589	0	0	0.202	0.159	0.038	0.037	0.005
66 EAST CENTRAL ILLINOIS INTRASTATE									
CHAMPAIGN COUNTY									
Champaign	606 E. Grove	8601	0	0	0.032	0.025	0.010	0.010	0.002
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Bedford Park	7800 W. 65th St.	8664	0	0	0.126	0.114	0.060	0.045	0.008
Blue Island	12700 Sacramento	8197	0	0	0.103	0.090	0.052	0.048	0.009
Calumet City	1703 State Sr.	8653	0	0	0.104	0.078	0.038	0.034	0.009
Chicago - CTA	320 S. Franklin	8490	0	0	0.053	0.048	0.024	0.023	0.004
Chicago - SE Police	103rd & Luella	8571	0	0	0.062	0.054	0.026	0.016	0.003
Chicago - Washington ES	3611 E. 114th St.	8394	0	0	0.067	0.048	0.021	0.018	0.006
Cicero	1830 S. 51st Ave.	8676	0	0	0.083	0.081	0.032	0.028	0.006
Lemont	729 Houston	8639	0	0	0.168	0.105	0.041	0.034	0.006
DuPAGE COUNTY									
Lisle	Morton Arboretum	8610	0	0	0.113	0.073	0.028	0.019	0.003
WILL COUNTY									
Joliet	Rte 6 & Young Rd.	8530	0	0	0.072	0.069	0.040	0.023	0.005
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)									
ROCK ISLAND COUNTY									
Moline	30 18th St.	8660	0	0	0.027	0.027	0.010	0.010	0.003

Primary 24-Hour Standard 0.14 ppm; Primary Annual Standard 0.03 ppm

Table B9

1999
SULFUR DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES TOTAL	3-HR > 0.5	24-HR > 0.14	HIGHEST SAMPLES 3-HR AVG. 1ST	3-HR AVG. 2ND	24-HR AVG. 1ST	24-HR AVG. 2ND	ANNUAL ARITHMETIC MEAN
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Alton	409 Main St.	8674	0	0	0.123	0.091	0.042	0.031	0.007
Granite City	2001 Edison	8677	0	0	0.069	0.063	0.025	0.021	0.006
South Roxana	Michigan Ave.	8577	0	0	0.187	0.154	0.067	0.056	0.008
Wood River	54 N. Walcott	8617	0	0	0.140	0.124	0.056	0.036	0.007
Wood River	1710 Vaughn Rd.	8689	0	0	0.158	0.154	0.084	0.061	0.009
RANDOLPH COUNTY									
Houston	Twp Rd 150 & Twp Rd 45	8671	0	0	0.287	0.255	0.072	0.065	0.004
ST. CLAIR COUNTY									
East St. Louis	13th & Tudor	8672	0	0	0.119	0.082	0.032	0.031	0.008
Marissa	Risdon School Rd.	8616	1	0	0.567	0.242	0.107	0.037	0.004
Sauget	Little Ave.	8681	0	0	0.158	0.147	0.074	0.036	0.008
74 SOUTHEAST ILLINOIS INTRASTATE									
WABASH COUNTY									
Mount Carmel	Division St	7351	0	0	0.158	0.089	0.033	0.032	0.007
Rural Wabash County	South of SR-1	6671	0	0	0.149	0.133	0.052	0.036	0.005
75 WEST CENTRAL ILLINOIS INTRASTATE									
ADAMS COUNTY									
Quincy	732 Hampshire	8648	0	0	0.125	0.108	0.040	0.033	0.005
MACON COUNTY									
Decatur	2200 N. 22nd St.	8650	0	0	0.069	0.066	0.038	0.028	0.005
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	8671	0	0	0.042	0.029	0.014	0.013	0.003
SANGAMON COUNTY									
Springfield	Sewage Plant	8634	0	0	0.176	0.152	0.070	0.059	0.006

Primary 24-Hour Standard 0.14 ppm; Primary Annual Standard 0.03 ppm

Table B10

1999
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1994	1995	1996	1997	1998	1999
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	Hurlburt & MacArthur	0.006	0.007	0.007	0.007	0.007	0.007
TAZEWELL COUNTY							
Pekin	272 Derby	0.007	0.008	0.006	0.007	0.006	0.005
66 EAST CENTRAL ILLINOIS INTRASTATE							
CHAMPAIGN COUNTY							
Champaign	606 E. Grove	0.004	0.003	0.003	0.004	0.003	0.002
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Bedford Park	7800 W. 65th St.	0.009	0.009	0.007	0.008	0.007	0.008
Blue Island	12700 Sacramento	0.007	0.005	0.005	0.007	0.008	0.009
Calumet City	1703 State St.	0.005	0.005	0.003	0.004	0.004	0.009
Chicago -CTA	320 S. Franklin	-	+	0.005	0.005	0.005	0.004
Chicago - SE Police	103rd & Luella	0.003	0.003	0.002	0.002	0.002	0.003
Chicago - Washington ES	3611 E. 114th St.	0.005	0.006	0.005	0.006	0.005	0.006
Cicero	1830 S. 51st Ave.	0.005	0.004	0.004	0.006	0.005	0.006
Lemont	729 Houston	0.007	0.005	0.006	0.005	0.006	0.006
DuPAGE COUNTY							
Lisle	Morton Arboretum	0.003	0.003	0.003	0.004	0.003	0.003
WILL COUNTY							
Joliet	Rte 6 & Young Rd.	0.004	0.004	0.004	0.005	0.004	0.005
69 METROPOLITAN QUAD CITIES INTERSTATE (IA - IL)							
ROCK ISLAND COUNTY							
Moline	30 18th St.	0.003	0.003	0.002	0.002	0.002	0.003

- Station not in operation during year shown

+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.03 ppm

Table B10

1999
SHORT-TERM TRENDS
SULFUR DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1994	1995	1996	1997	1998	1999
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Alton	409 Main St.	0.008	0.010	0.009	0.007	0.008	0.007
Granite City	2001 Edison	-	0.007	0.006	0.006	0.006	0.006
South Roxanna	Michigan Ave.	0.012	0.011	0.010	0.010	0.008	0.008
Wood River	54 N. Walcott	0.006	0.007	0.007	0.006	0.006	0.007
Wood River	1710 Vaughn Rd.	0.012	0.012	0.011	0.009	+	0.009
RANDOLPH COUNTY							
Houston	Twp Rd 150 & Twp Rd 45	0.006	0.006	0.006	0.005	0.005	0.004
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	0.010	0.009	0.009	0.009	0.008	0.008
Marissa	Risdon School Rd.	0.007	0.005	0.004	0.005	0.005	0.004
Sauget	Little Ave.	0.008	0.009	0.009	0.009	0.008	0.008
74 SOUTHEAST ILLINOIS INTRASTATE							
WABASH COUNTY							
Mount Carmel	Division St.	0.012	0.011	0.009	0.007	0.004	0.007
Rural Wabash County	South of SR-1	0.011	0.009	0.009	0.007	0.005	0.005
75 WEST CENTRAL ILLINOIS INTRASTATE							
ADAMS COUNTY							
Quincy	732 Hampshire	0.005	0.005	0.004	0.004	0.004	0.005
MACON COUNTY							
Decatur	2200 N. 22nd St.	0.006	0.005	0.005	0.006	0.005	0.005
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	0.003	0.003	0.002	0.003	0.003	0.003
SANGAMON COUNTY							
Springfield	Sewage Plant	0.006	0.006	0.006	0.006	0.006	0.006

- Station not in operation during year shown
+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.03 ppm

Table B11

1999
NITROGEN DIOXIDE
(parts per million)

STATION	ADDRESS	NUMBER OF SAMPLES	HIGHEST SAMPLES 1-HOUR 1ST	1-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Calumet City	1703 State St.	8653	0.095	0.093	0.046	0.044	0.024
Chicago - CTA	320 S. Franklin	8611	0.103	0.088	0.055	0.054	0.032
Chicago - Jardine [1]	1000 E. Ohio	3667	0.086	0.082	0.048	0.045	+
Chicago - Truman	1145 W. Wilson	8584	0.113	0.108	0.052	0.048	0.024
Chicago - University	5720 S. Ellis	8692	0.085	0.081	0.049	0.044	0.022
Cicero	1830 S. 51st Ave.	8556	0.092	0.088	0.056	0.052	0.027
Northbrook	750 Dundee Rd.	7666	0.073	0.067	0.048	0.039	0.017
Schiller Park	4743 N. Mannheim	8037	0.107	0.105	0.069	0.065	0.031
LAKE COUNTY							
Zion [1]	Camp Logan	4043	0.080	0.076	0.022	0.019	+
WILL COUNTY							
Braidwood	36400 S. Essex Rd.	8371	0.052	0.049	0.035	0.034	0.010
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	8355	0.072	0.072	0.035	0.033	0.019

1 PAMS monitor operated only during “ozone season”

\+ Did nor meet minimum statistical selection criteria (See Appendix B.1)

Primary Annual Standard 0.053 ppm

Table B12

1999
SHORT-TERM TRENDS
NITROGEN DIOXIDE

STATION	ADDRESS	ANNUAL MEANS (ppm) 1994	1995	1996	1997	1998	1999
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Calumet City	1703 State St.	0.024	0.024	0.022	0.024	0.025	0.024
Chicago - CTA	320 S. Franklin	0.032	0.032	0.031	0.034	0.032	0.032
Chicago - Truman	1145 W. Wilson	-	-	-	-	0.024	0.024
Chicago - University	5720 S. Ellis	0.025	0.027	0.024	0.024	0.023	0.022
Cicero	1820 S. 51st St.	0.026	0.027	0.027	0.027	0.026	0.027
Northbrook	750 Dundee Rd.	-	-	-	+	0.017	0.017
Schiller Park	4743 N. Mannheim	-	-	-	-	0.031	0.031
WILL COUNTY							
Braidwood	36400 S. Essex Rd.	-	+	0.009	0.009	0.009	0.010
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
ST. CLAIR COUNTY							
East St. Louis	13th & Tudor	0.020	0.021	0.020	0.019	0.018	0.019

- Station not in operation during year shown

+ Did not meet minimum statistical selection criteria (See Section B.1)

Primary Annual Standard 0.053 ppm

Table B13

1999
LEAD
(micrograms per cubic meter)

STATION	ADDRESS	NUMBER OF QUARTERS >1.5	QUARTERLY AVERAGES 1st	2nd	3rd	4th	ANNUAL MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)							
PEORIA COUNTY							
Peoria	613 N.E. Jefferson	0	0.01	0.01	0.02	0.02	0.02
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	0	0.01	0.02	0.02	0.01	0.02
Chicago - Cermak	735 W. Harrison	0	0.03	0.05	0.06	0.06	0.05
Chicago - Mayfair	4850 Wilson Ave.	0	0.02	0.02	+	0.02	0.02
Chicago - Washington	3535 E. 114th St.	0	0.03	0.02	0.04	0.03	0.03
Maywood	1500 Maybrook Dr.	0	0.04	0.03	0.03	0.03	0.03
Schiller Park	4243 N. Mannheim Rd.	0	0.02	0.01	0.02	0.02	0.02
Summit	60th St. & 74th Ave.	0	0.02	0.02	0.02	0.03	0.03
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)							
MADISON COUNTY							
Granite City	15th & Madison	0	0.05	0.08	0.10	0.08	0.08
Wood River	54 N. Walcott	0	0.06	0.04	0.11	0.10	0.08
Chemetco - 2E	Rural County	1	0.31	1.02	0.48	1.65	0.87
Chemetco - 4SE	Rural County	0	0.60	0.75	0.44	1.10	0.72
Chemetco - 5N	Rural County	1	1.34	0.97	0.61	2.50	1.36
ST. CLAIR COUNTY							
East St. Louis	13th St. & Tudor Ave.	0	0.07	0.05	0.09	0.05	0.07
75 WEST CENTRAL ILLINOIS INTRASTATE							
MACOUPIN COUNTY							
Nilwood	Heaton & DuBois	0	0.01	0.01	0.02	0.03	0.02

Primary Quarterly Standard 1.5 ug/m3

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
			ARSENIC				**BERYLLIUM**		
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	0.003	0.002	0.001	57	0.000	0.000	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	500 W. 123rd. St.	56	0.006	0.005	0.001	NA			
Chicago - Cermak	735 W. Harrison	56	0.006	0.004	0.001	NA			
Chicago - Mayfair	4850 Wilson Ave	47	0.004	0.003	+	NA			
Chicago - Washington	3535 E. 114th St.	60	0.015	0.006	0.002	NA			
Maywood	1500 Maybrook Dr.	59	0.005	0.003	0.001	NA			
Schiller Park	4743 N. Mannheim Rd.	61	0.004	0.003	0.001	61	0.000	0.000	0.000
Summit	60th St. & 74th Ave.	59	0.004	0.004	0.001	NA			
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	0.021	0.005	0.002	57	0.000	0.000	0.000
Wood River	54 N. Walcott	56	0.004	0.003	0.001	56	0.000	0.000	0.000
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	0.033	0.021	0.003	58	0.000	0.000	0.000
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	0.003	0.003	0.001	58	0.000	0.000	0.000

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	CADMIUM TOTAL SAMPLES	CADMIUM HIGHEST 1st	CADMIUM HIGHEST 2nd	CADMIUM ARITH. MEAN	CHROMIUM TOTAL SAMPLES	CHROMIUM HIGHEST 1st	CHROMIUM HIGHEST 2nd	CHROMIUM ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	0.000	0.000	0.000	57	0.003	0.003	0.000
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	56	0.011	0.008	0.002	56	0.008	0.008	0.003
Chicago - Cermak	735 W. Harrison	56	0.014	0.011	0.003	56	0.022	0.021	0.009
Chicago - Mayfair	4850 Wilson Ave	47	0.004	0.004	+	47	0.014	0.013	+
Chicago - Washington	3535 E. 114th St.	60	0.013	0.009	0.003	60	0.027	0.015	0.006
Maywood	1500 Maybrook Dr.	59	0.015	0.013	0.003	59	0.030	0.024	0.011
Schiller Park	4743 N. Mannheim Rd.	61	0.000	0.000	0.000	61	0.007	0.007	0.002
Summit	60th St. & 74th Ave.	59	0.009	0.008	0.002	59	0.011	0.008	0.003
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	0.012	0.005	0.000	57	0.020	0.018	0.005
Wood River	54 N. Walcott	58	0.025	0.008	0.001	58	0.003	0.003	0.000
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	0.134	0.095	0.008	58	0.003	0.003	0.001
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	0.000	0.000	0.000	58	0.000	0.000	0.000

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	IRON TOTAL SAMPLES	IRON HIGHEST 1st	IRON HIGHEST 2nd	IRON ARITH. MEAN	MANGANESE TOTAL SAMPLES	MANGANESE HIGHEST 1st	MANGANESE HIGHEST 2nd	MANGANESE ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	1.13	1.01	0.40	57	0.066	0.064	0.019
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	56	1.77	1.13	0.53	56	0.205	0.123	0.035
Chicago - Cermak	735 W. Harrison	56	6.81	3.99	1.65	56	0.156	0.143	0.061
Chicago - Mayfair	4850 Wilson Ave	47	2.02	1.71	+	47	0.172	0.095	+
Chicago - Washington	3535 E. 114th St.	60	6.02	4.07	1.23	60	0.912	0.584	0.169
Maywood	1500 Maybrook Dr.	59	9.96	9.11	2.99	59	0.187	0.171	0.074
Schiller Park	4743 N. Mannheim Rd.	61	2.89	2.73	1.29	61	0.100	0.064	0.031
Summit	60th St. & 74th Ave.	59	1.36	1.33	0.60	59	0.088	0.084	0.029
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	7.32	4.60	1.74	57	0.559	0.316	0.126
Wood River	54 N. Walcott	58	1.52	1.22	0.50	58	0.077	0.057	0.022
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	2.08	1.88	0.86	58	0.106	0.081	0.037
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	0.65	0.64	0.25	58	0.038	0.028	0.010

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
			NICKEL				SELENIUM		
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	0.000	0.000	0.000	57	0.006	0.005	0.001
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	56	0.037	0.016	0.007	NA			
Chicago - Cermak	735 W. Harrison	56	0.030	0.019	0.010	NA			
Chicago - Mayfair	4850 Wilson Ave	47	0.014	0.012	+	NA			
Chicago - Washington	3535 E. 114th St.	59	0.024	0.018	0.009	NA			
Maywood	1500 Maybrook Dr.	59	0.022	0.020	0.011	NA			
Schiller Park	4743 N. Mannheim Rd.	61	0.007	0.003	0.000	61	0.005	0.004	0.001
Summit	60th St. & 74th Ave.	59	0.068	0.016	0.008	NA			
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	0.000	0.000	0.000	57	0.004	0.004	0.001
Wood River	54 N. Walcott	58	0.072	0.069	0.005	58	0.005	0.002	0.000
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	0.000	0.000	0.000	58	0.003	0.003	0.001
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	0.000	0.000	0.000	58	0.004	0.003	0.001

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN	TOTAL SAMPLES	HIGHEST 1st	HIGHEST 2nd	ARITH. MEAN
				VANADIUM					
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	0.005	0.000	0.000				
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	NA							
Chicago - Cermak	735 W. Harrison	NA							
Chicago - Mayfair	4850 Wilson Ave	NA							
Chicago - Washington	3535 E. 114th St.	NA							
Maywood	1500 Maybrook Dr.	NA							
Schiller Park	4743 N. Mannheim Rd.	61	0.003	0.002	0.000				
Summit	60th St. & 74th Ave.	NA							
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	0.018	0.015	0.004				
Wood River	54 N. Walcoot	58	0.005	0.002	0.000				
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	0.005	0.002	0.001				
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	0.000	0.000	0.000				

Table B14

1999
FILTER ANALYSIS DATA
(micrograms per cubic meter)

STATION	ADDRESS	NITRATES TOTAL SAMPLES	NITRATES HIGHEST 1st	NITRATES HIGHEST 2nd	NITRATES ARITH. MEAN	SULFATES TOTAL SAMPLES	SULFATES HIGHEST 1st	SULFATES HIGHEST 2nd	SULFATES ARITH. MEAN
65 BURLINGTON - KEOKUK INTERSTATE (IA - IL)									
PEORIA COUNTY									
Peoria	613 N.E. Jefferson	57	13.7	10.6	4.3	57	19.3	17.2	7.3
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)									
COOK COUNTY									
Alsip	4500 W. 123rd. St.	56	11.6	11.0	4.3	56	24.8	21.0	6.0
Chicago - Cermak	735 W. Harrison	56	14.9	13.3	4.9	56	26.9	15.1	7.0
Chicago - Mayfair	4850 Wilson Ave	47	11.5	10.9	+	47	13.1	12.7	+
Chicago - Washington	3535 E. 114th St.	60	11.0	10.7	3.8	60	20.0	19.7	6.4
Maywood	1500 Maybrook Dr.	59	9.8	9.8	4.1	59	26.7	19.6	8.1
Schiller Park	4743 N. Mannheim Rd.	61	19.0	12.5	5.8	61	22.9	21.8	8.4
Summit	60th St. & 74th Ave.	59	10.6	9.5	3.9	59	19.2	18.0	6.1
70 METROPOLITAN ST. LOUIS INTERSTATE (IL - MO)									
MADISON COUNTY									
Granite City	15th & Madison	57	10.4	9.6	4.8	57	31.5	25.8	9.2
Wood River	54 N. Walcott	58	9.4	8.5	4.2	58	24.8	23.6	8.1
ST. CLAIR COUNTY									
East St. Louis	13th St. & Tudor Ave.	58	12.8	9.3	4.2	58	31.9	25.5	9.6
75 WEST CENTRAL ILLINOIS INTRASTATE									
MACOUPIN COUNTY									
Nilwood	Heaton & DuBois	58	10.2	9.8	4.3	58	24.9	22.9	7.4

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)								
COOK COUNTY								
Chicago	1000 E. Ohio							
COMPOUNDS								
Ethane		50.9	48.7			17.7	15.2	6.4
Ethylene		28.1	26.8			10.4	8.6	3.1
Propane		70.4	40.3			9.7	7.8	3.6
Propylene		19.0	17.3			4.3	3.9	1.3
Acetylene		11.0	9.0			4.8	3.8	1.4
N - Butane		81.2	35.8			8.0	5.7	2.8
Isobutane		77.9	30.9			2.9	2.7	1.6
Trans - 2 - Butene		7.4	3.1			1.9	1.8	1.2
Cis - 2 - Butene		6.5	2.1			0.6	0.5	0.2
N - Pentane		32.7	31.2			8.6	7.9	2.7
Isopentane		74.1	68.3			21.4	18.9	6.4
1 - Pentene		2.4	2.2			0.5	0.5	0.1
Trans - 2 - Pentene		4.1	3.4			0.7	0.7	0.1
Cis - 2 - Pentene		5.7	1.9			0.6	0.4	0.0
3 - Methylpentane		12.1	11.0			3.9	3.9	0.9
N - Hexane		17.4	13.6			5.1	5.0	1.4
N - Heptane		7.7	6.2			2.3	2.3	0.4
N - Octane		3.9	3.3			1.0	1.0	0.1
N - Nonane		9.2	5.1			1.8	1.6	0.2
Cyclopentane		11.5	5.1			0.8	0.8	0.2
Isoprene		14.9	2.5			3.2	0.4	0.2
2,2 - Dimethylbutane		54.3	3.2			3.0	0.9	0.1
2,4 - Dimethylpentane		13.1	5.9			2.7	2.1	0.3
Cyclohexane		5.2	2.7			1.0	0.8	0.1
3 - Methylhexane		10.1	8.7			3.1	3.1	0.8
2,2,4 - Trimethylpentane		42.1	17.1			7.1	5.4	2.0
2,3,4 - Trimethylpentane		13.0	5.9			2.8	2.2	0.5
3 - Methylheptane		4.9	2.9			1.0	0.9	0.1
Methylcyclohexane		4.7	3.8			1.2	1.1	0.2
Methylcyclopentane		8.5	7.4			2.7	2.6	0.6
2 - Methylhexane		9.2	7.1			2.7	2.5	0.6
1 - Butene		5.3	2.5			0.6	0.6	0.1
2,3 - Dimethylbutane		7.7	5.8			2.2	2.1	0.5
2 - Methylpentane		18.9	17.1			6.0	5.9	1.7
2,3 - Dimethylpentane		18.5	7.6			4.1	3.1	0.8
2 - Methylheptane		2.6	1.5			0.6	0.5	0.1
Benzene		18.3	15.7			4.7	4.0	1.5

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
Toluene		120.5	46.6			17.2	17.2	4.6
Ethylbenzene		16.9	6.2			1.9	1.8	0.4
O - Xylene		8.5	6.3			2.4	2.4	0.6
M/P Xylene		52.3	20.0			7.0	6.8	1.9
1,3,5 - Trimethylbenzene		8.6	3.6			1.2	1.0	0.2
1,2,4 - Trimethylbenzene		30.4	11.8			3.7	3.6	0.8
N - Propylbenzene		4.4	3.4			0.6	0.5	0.0
Isopropylbenzene		1.2	1.2			0.1	0.0	0.0
Styrene		2.2	1.8			0.4	0.2	0.0
N-Decane		14.2	9.3			2.9	2.6	0.4
N-Undecane		9.0	7.3			2.2	1.6	0.4
O-Ethyltolune		7.1	2.6			0.7	0.7	0.1
M-Ethyltolune		16.2	5.9			2.0	1.7	0.4
P-Ethyltolune		8.1	3.5			1.0	0.6	0.1
M-Diethylbenzene		3.7	3.0			0.9	0.7	0.0
P-Diethylbenzene		6.7	2.5			1.1	0.7	0.1
1,2,3 Trimethylbenzene		8.0	6.8			3.2	1.8	0.9
Formaldehyde[1]				11.1	10.0			6.5
Acetaldehyde[1]				5.4	5.2			2.0
Northbrook	750 Dundee Rd.							
COMPOUNDS								
Ethane		39.5	36.9			12.2	11.4	6.2
Ethylene		51.0	28.1			4.5	3.7	1.2
Propane		32.4	29.2			8.4	7.3	3.7
Propylene		12.4	10.9			3.3	2.9	1.1
Acetylene		2.7	1.3			0.8	0.3	0.1
N - Butane		67.7	32.8			6.6	5.3	3.2
Isobutane		64.3	21.8			5.7	2.7	1.5
Trans - 2 - Butene		2.2	1.7			0.3	0.2	0.1
Cis - 2 - Butene		2.6	1.8			0.3	0.2	0.1
N - Pentane		77.5	30.0			15.1	6.2	3.1
Isopentane		208.6	83.3			31.2	16.5	7.1
1 - Pentene		7.3	3.3			1.0	0.4	0.1
Trans - 2 - Pentene		18.6	7.6			2.2	0.8	0.3
Cis - 2 - Pentene		10.3	4.2			1.2	0.4	0.1
3 - Methylpentane		38.3	14.4			5.3	3.1	1.3
N - Hexane		39.8	14.4			9.1	3.3	1.4

[1] Values in ppb (volume)

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

		HIGHEST SAMPLES (ppbc)						
		1-HOUR		3-HOUR		24-HOUR		JUN - AUG
STATION	ADDRESS	1ST	2ND	1ST	2ND	1ST	2ND	AVERAGE
N - Heptane		28.6	6.7			2.4	1.5	0.6
N - Octane		17.3	7.5			2.3	1.1	0.2
N - Nonane		32.2	9.3			4.3	1.6	0.4
Cyclopentane		6.4	2.6			0.8	0.5	0.1
Isoprene		29.4	19.7			11.9	6.0	3.0
2,2 - Dimethylbutane		7.1	2.5			1.5	0.5	0.2
2,4 - Dimethylpentane		76.9	12.9			13.3	1.5	0.9
Cyclohexane		7.3	2.5			1.5	0.5	0.1
3 - Methylhexane		38.9	8.9			7.0	2.0	0.8
2,2,4 - Trimethylpentane		253.5	35.8			38.0	4.8	2.7
2,3,4 - Trimethylpentane		92.8	10.1			12.5	1.4	0.8
3 - Methylheptane		15.6	3.6			2.2	0.4	0.2
Methylcyclohexane		23.4	4.0			3.4	0.8	0.3
Methylcyclopentane		25.6	10.2			5.7	1.8	0.7
2 - Methylhexane		37.2	8.3			6.6	1.6	0.7
1 - Butene		2.2	2.1			0.6	0.5	0.1
2,3 - Dimethylbutane		28.4	8.8			6.1	1.6	0.8
2 - Methylpentane		59.0	22.7			9.0	4.7	2.0
2,3 - Dimethylpentane		28.4	8.8			16.2	2.3	1.2
2 - Methylheptane		18.7	2.8			2.5	0.4	0.2
Benzene		26.9	17.8			8.3	5.2	3.2
Toluene		216.3	41.8			11.6	11.4	4.9
Ethylbenzene		41.6	5.3			5.6	1.4	0.6
O - Xylene		82.4	8.0			10.4	1.9	0.9
M/P Xylene		196.4	24.0			25.0	5.2	2.5
1,3,5 - Trimethylbenzene		35.3	15.8			4.4	2.0	0.3
1,2,4 - Trimethylbenzene		99.5	28.0			11.0	4.2	1.0
N - Propylbenzene		13.8	7.5			1.7	0.3	0.1
Isopropylbenzene		7.2	4.9			1.0	0.6	0.1
Styrene		11.6	2.3			1.4	0.8	0.2
N-Decane		2.2	1.0			0.4	0.1	0.1
N-Undecane		31.8	5.1			4.2	1.2	0.3
O-Ethyltolune		18.9	5.5			2.4	0.8	0.2
M-Ethyltolune		59.4	17.3			6.3	2.2	0.5
P-Ethyltolune		26.9	8.7			3.0	1.3	0.1
M-Diethylbenzene		10.3	3.9			1.6	0.6	0.1
P-Diethylbenzene		26.4	9.7			3.5	1.5	0.2
1,2,3 Trimethylbenzene		38.2	26.7			4.5	3.6	0.8
Formaldehyde[1]				6.4	6.2			3.6
Acetaldehyde[1]				2.4	2.1			1.3

[1] Values in ppb (volume)

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
LAKE COUNTY								
Zion	Camp Logan							
COMPOUNDS								
Ethane		19.8	18.8			8.6	8.1	4.2
Ethylene		24.0	10.4			4.7	3.8	1.3
Propane		92.9	23.4			9.4	5.8	3.1
Propylene		14.6	7.1			1.7	1.6	0.5
Acetylene		7.1	3.4			1.8	1.1	0.5
N - Butane		22.3	16.8			4.9	4.5	1.9
Isobutane		38.2	7.6			5.2	2.3	0.8
Trans - 2 - Butene		1.4	0.9			0.1	0.1	0.0
Cis - 2 - Butene		2.1	1.1			0.1	0.0	0.0
N - Pentane		68.1	32.7			6.4	6.0	2.0
Isopentane		39.6	32.2			10.8	9.7	3.7
1 - Pentene		1.2	0.8			0.2	0.2	0.1
Trans - 2 - Pentene		1.7	1.2			0.3	0.2	0.1
Cis - 2 - Pentene		1.0	0.7			0.1	0.1	0.0
3 - Methylpentane		6.3	5.3			2.2	1.9	0.4
N - Hexane		6.8	6.8			2.3	2.2	0.7
N - Heptane		3.4	2.3			0.9	0.9	0.2
N - Octane		1.8	1.7			0.4	0.4	0.1
N - Nonane		2.4	1.4			0.5	0.4	0.1
Cyclopentane		16.0	2.0			0.7	0.4	0.1
Isoprene		88.7	45.0			26.3	15.0	5.3
2,2 - Dimethylbutane		1.5	0.9			0.5	0.3	0.1
2,4 - Dimethylpentane		3.8	2.9			1.1	0.9	0.3
Cyclohexane		1.3	1.2			0.4	0.3	0.1
3 - Methylhexane		3.5	3.2			1.3	1.1	0.3
2,2,4 - Trimethylpentane		17.5	10.7			3.6	3.4	1.0
2,3,4 - Trimethylpentane		7.9	4.5			1.1	1.0	0.3
3 - Methylheptane		1.3	1.0			0.2	0.2	0.0
Methylcyclohexane		2.7	2.3			0.4	0.3	0.1
Methylcyclopentane		3.5	2.9			1.3	1.1	0.3
2 - Methylhexane		2.6	1.3			1.1	0.9	0.3
1 - Butene		2.9	0.9			0.2	0.2	0.1
2,3 - Dimethylbutane		4.1	2.7			1.1	1.0	0.3
2 - Methylpentane		9.5	7.7			3.4	2.8	1.0
2,3 - Dimethylpentane		4.6	4.3			1.6	1.5	0.4
2 - Methylheptane		0.8	0.7			0.2	0.2	0.0
Benzene		12.5	5.6			2.5	2.4	0.9
Toluene		62.2	22.8			8.3	8.1	2.6
Ethylbenzene		6.6	4.4			1.8	1.3	0.4

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
O - Xylene		7.4	4.3			1.8	1.3	0.4
M/P Xylene		25.8	15.8			6.1	4.2	1.0
1,3,5 - Trimethylbenzene		1.8	1.8			0.4	0.4	0.1
1,2,4 - Trimethylbenzene		15.3	13.8			2.3	1.5	0.7
N - Propylbenzene		4.6	0.8			0.2	0.2	0.0
Isopropylbenzene		0.6	0.5			0.1	0.1	0.0
Styrene		1.7	1.7			0.3	0.2	0.1
N-Decane		2.1	0.9			0.0	0.0	0.0
N-Undecane		3.6	3.0			0.6	0.5	0.1
O-Ethyltolune		1.1	1.0			0.3	0.3	0.1
M-Ethyltolune		3.1	2.9			1.0	0.7	0.2
P-Ethyltolune		3.4	2.1			0.6	0.5	0.1
M-Diethylbenzene		1.3	1.3			0.3	0.2	0.0
P-Diethylbenzene		1.1	1.1			0.3	0.2	0.1
1,2,3 Trimethylbenzene		5.9	4.2			1.7	1.1	0.3
Formaldehyde[1]				5.8	5.7			3.6
Acetaldehyde[1]				2.5	2.5			1.2
WILL COUNTY								
Braidwood	36400 S. Essex Road							
COMPOUNDS								
Ethane		30.3	27.0			9.7	8.9	3.6
Ethylene		295.1	159.1			45.1	16.8	2.1
Propane		42.1	29.5			8.2	6.0	3.2
Propylene		36.8	17.6			5.8	2.9	0.6
Acetylene		6.4	3.6			0.9	0.6	0.2
N - Butane		13.5	9.9			4.4	4.0	1.4
Isobutane		34.5	18.1			4.6	3.8	0.8
Trans - 2 - Butene		1.0	0.6			0.1	0.0	0.0
Cis - 2 - Butene		23.4	0.7			0.9	0.2	0.0
N - Pentane		15.2	9.6			3.1	2.8	0.8
Isopentane		58.6	25.4			7.1	6.0	1.4
1 - Pentene		1.5	0.7			0.6	0.0	0.0
Trans - 2 - Pentene		7.4	0.5			0.3	0.0	0.0
Cis - 2 - Pentene		0.2	0.0			0.0	0.0	0.0
3 - Methylpentane		19.5	11.1			1.6	1.1	1.3
N - Hexane		21.5	21.1			3.5	2.7	0.4
N - Heptane		5.5	2.8			1.1	0.2	0.1
N - Octane		15.6	13.1			1.0	0.7	0.1

[1] Values in ppb (volume)

Table B15

1999
(JUNE - AUGUST)

VOLATILE ORGANIC COMPOUNDS
(parts per billion carbon)

STATION	ADDRESS	HIGHEST SAMPLES (ppbc) 1-HOUR 1ST	1-HOUR 2ND	3-HOUR 1ST	3-HOUR 2ND	24-HOUR 1ST	24-HOUR 2ND	JUN - AUG AVERAGE
COMPOUNDS								
N - Nonane		12.9	2.1			0.9	0.1	0.1
Cyclopentane		18.0	2.4			0.8	0.7	0.1
Isoprene		41.3	16.3			12.8	4.1	1.9
2,2 - Dimethylbutane		5.2	0.0			0.8	0.0	0.0
2,4 - Dimethylpentane		10.2	6.1			0.6	0.4	0.0
Cyclohexane		21.7	12.2			1.3	0.9	0.2
3 - Methylhexane		15.6	15.0			1.1	1.1	0.2
2,2,4 - Trimethylpentane		19.2	13.3			1.4	1.1	0.3
2,3,4 - Trimethylpentane		7.0	3.0			0.8	0.2	0.1
3 - Methylheptane		14.6	3.7			0.7	0.2	0.0
Methylcyclohexane		18.2	5.4			1.4	0.6	0.1
Methylcyclopentane		23.6	7.2			1.9	1.0	0.1
2 - Methylhexane		32.2	8.5			1.4	1.1	0.1
1 - Butene		20.4	10.1			2.4	1.7	0.1
2,3 - Dimethylbutane		1.5	0.6			0.2	0.1	0.0
2 - Methylpentane		5.4	1.9			0.9	0.6	0.1
2,3 - Dimethylpentane		13.9	10.9			1.1	0.5	0.1
2 - Methylheptane		4.0	3.1			0.2	0.1	0.0
Benzene		87.6	19.5			7.6	3.4	0.9
Toluene		43.6	22.2			4.9	3.1	1.3
Ethylbenzene		40.6	5.8			2.4	0.3	0.2
O - Xylene		11.8	10.7			1.7	0.4	0.2
M/P Xylene		62.6	26.0			4.6	1.1	0.6
1,3,5 - Trimethylbenzene		19.5	5.0			1.1	0.4	0.1
1,2,4 - Trimethylbenzene		63.0	12.9			3.5	1.9	0.9
N - Propylbenzene		9.4	2.9			0.3	0.2	0.0
Isopropylbenzene		4.9	3.5			0.3	0.2	0.0
Styrene		33.3	6.5			1.7	0.4	0.1
N-Decane		7.4	2.9			1.8	0.1	0.1
N-Undecane		222.9	6.0			24.7	0.3	0.2
O-Ethyltolune		13.7	3.8			1.3	0.5	0.0
M-Ethyltolune		36.7	9.6			1.6	1.5	0.1
P-Ethyltolune		18.0	4.5			0.6	0.4	0.1
M-Diethylbenzene		5.7	4.3			0.6	0.5	0.0
P-Diethylbenzene		62.6	18.3			6.9	0.7	0.1
1,2,3 Trimethylbenzene		9.2	6.6			1.1	1.5	0.3
Formaldehyde[1]				5.1	4.2			2.6
Acetaldehyde[1]				1.7	1.4			1.1

[1] Values in ppb (volume)

Table B16

1999
MERCURY
(nanograms per cubic meter)

STATION	ADDRESS	TOTAL NUMBER OF SAMPLES	HIGHEST SAMPLES 1st	2nd	3rd	4th	ANNUAL ARITHMETIC MEAN
67 METROPOLITAN CHICAGO INTERSTATE (IL - IN)							
COOK COUNTY							
Alsip	4500 W. 123rd St.	51	3.2	2.1	2.1	2.0	1.3
Blue Island	12700 Sacramento	55	3.1	2.6	2.4	2.4	1.8

APPENDIX C
PRECISION AND ACCURACY DATA SUMMARY AND TABLES

C.1 PRECISION AND ACCURACY DATA SUMMARY

The U.S. Environmental Protection Agency (USEPA) regulations governing the SLAMS/NAMS network were published in 40 CFR, Part 58. These regulations specify, in addition to other criteria, the minimum quality assurance requirements for monitoring of pollutants for which National Ambient Air Quality Standards (NAAQS) have been established. This section summarizes one aspect of the quality assurance program, that being, the assessment of the quality of the monitoring data by the determination of the accuracy and precision of the monitoring equipment. Each agency that is responsible for a portion of the SLAMS network is required to perform this precision and accuracy testing. Illinois EPA and Cook County DEC are responsible for the testing of their respective parts of the Illinois SLAMS network. USEPA has established guidelines for evaluating the upper and lower 95% probability limits. The quarterly probability limits for precision data should fall within a range of -15% to +15% and the quarterly probability limits for accuracy data should fall within a range of -20% to +20%. These ranges are only guidelines, but when they are exceeded, procedures should be reviewed to determine the reason for the wide variation in the data.

Table C1

1999
PRECISION DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF SITES	TOTAL SAMPLES	PROBABILITY LIMITS (percent) UPPER 95%	LOWER 95%
SITES OPERATED BY ILLINOIS EPA					
Sulfur Dioxide	1st Quarter	21	252	2	-6
	2nd Quarter	21	249	5	-6
	3rd Quarter	21	261	5	-7
	4th Quarter	21	240	3	-7
	Year		1002	4	-6
Ozone	1st Quarter	31	302	6	-7
	2nd Quarter	33	389	7	-8
	3rd Quarter	33	407	6	-8
	4th Quarter	32	296	6	-8
	Year		1394	6	-8
Carbon Monoxide	1st Quarter	7	81	4	-5
	2nd Quarter	7	76	9	-3
	3rd Quarter	7	83	8	-2
	4th Quarter	7	80	8	-3
	Year		320	7	-3
Nitrogen Dioxide	1st Quarter	5	48	3	-7
	2nd Quarter	7	74	9	-12
	3rd Quarter	7	75	12	-13
	4th Quarter	5	49	2	-12
	Year		246	6	-11
Inhalable Particulate PM_{10}	1st Quarter	1	14	13	-6
	2nd Quarter	1	13	15	-7
	3rd Quarter	1	15	12	-5
	4th Quarter	1	15	19	-9
	Year		57	15	-7
Lead	1st Quarter	1	15	(1)	(1)
	2nd Quarter	1	11	(1)	(1)
	3rd Quarter	1	15	(1)	(1)
	4th Quarter	1	14	(1)	(1)
	Year		55	(1)	(1)

1. All collected samples were below USEPA established minimums. Probability Limits could not be calculated.

Table C1

1999
PRECISION DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF SITES	TOTAL SAMPLES	PROBABILITY LIMITS (percent) UPPER 95%	LOWER 95%
SITES OPERATED BY COOK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL					
Sulfur Dioxide	1st Quarter	6	78	5	-3
	2nd Quarter	6	75	4	-6
	3rd Quarter	6	78	3	-6
	4th Quarter	6	77	5	-5
	Year		308	4	-5
Ozone	1st Quarter	3	35	3	-4
	2nd Quarter	10	125	4	-5
	3rd Quarter	10	127	4	-4
	4th Quarter	10	66	5	-4
	Year		353	4	-4
Carbon Monoxide	1st Quarter	3	38	5	-2
	2nd Quarter	3	36	4	-3
	3rd Quarter	3	40	6	-4
	4th Quarter	3	39	4	-3
	Year		153	5	-3
Nitrogen Dioxide	1st Quarter	4	50	5	-4
	2nd Quarter	4	46	5	-4
	3rd Quarter	4	53	4	-5
	4th Quarter	4	48	5	-6
	Year		197	5	-5
Inhalable Particulate PM_{10}	1st Quarter	1	15	8	-12
	2nd Quarter	1	15	6	-7
	3rd Quarter	1	15	13	-3
	4th Quarter	1	15	19	-9
	Year		60	12	-8
Lead	1st Quarter	1	15	(1)	(1)
	2nd Quarter	1	15	(1)	(1)
	3rd Quarter	1	15	(1)	(1)
	4th Quarter	1	15	(1)	(1)
	Year		50	(1)	(1)

1. All collected samples were below USEPA established minimums. Probability Limits could not be calculated.

Table C2

1999
ACCURACY DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF AUDITS	PROBABILITY LIMITS LEVEL 1 +95%	LEVEL 1 -95%	LEVEL 2 +95%	LEVEL 2 -95%	LEVEL 3 +95%	LEVEL 3 -95%	LEVEL 4 +95%	LEVEL 4 -95%
SITES OPERATED BY ILLINOIS EPA										
Sulfur Dioxide	1st Quarter	6	1	-11	1	-9	0	-8	0% [1]	
	2nd Quarter	5	8	-15	3	-11	3	-10		
	3rd Quarter	4	6	-6	9	-4	10	-20		
	4th Quarter	6	7	-13	6	-13	5	-13		
	Year	21	5	-11	5	-9	4	-13		
Ozone	1st Quarter	9	9	-8	4	-6	4	-8		
	2nd Quarter	8	10	-16	3	-12	3	-12		
	3rd Quarter	10	11	-13	5	-10	4	-10		
	4th Quarter	8	6	-11	5	-3	4	-2		
	Year	35	9	-12	4	-8	4	-8		
Carbon Monoxide	1st Quarter	2	12	-1	7	+1	9	-5		
	2nd Quarter	2	6	-1	6	+4	6	+5		
	3rd Quarter	2	8	-12	9	-5	11	-11		
	4th Quarter	2	-1	-5	3	-2	4	-7		
	Year	8	6	-5	6	0	8	-4		
Nitrogen Dioxide	1st Quarter	1 [1]	NA	NA	NA	NA	NA	NA		
	2nd Quarter	1 [1]	NA	NA	NA	NA	NA	NA		
	3rd Quarter	4	26	-22	17	-17	12	-17		
	4th Quarter	3	1	-2	4	-8	6	-8		
	Year	9	14	-11	10	-12	9	-12		
Inhalable Particulate PM_{10}	1st Quarter	8			8	-9				
	2nd Quarter	4			8	-8				
	3rd Quarter	2			12	-2				
	4th Quarter	7			7	-16				
	Year	21			9	-9				
Lead	1st Quarter	3	0	-7	-2	-2				
	2nd Quarter	3	9	-11	10	-7				
	3rd Quarter	3	-3	-7	-1	-6				
	4th Quarter	3	6	-14	2	-10				
	Year	12	3	-10	2	-6				

1. Less than two audits were performed for this parameter during the quarter. Probability Limits could not be calculated.

Table C2

1999
ACCURACY DATA SUMMARY

PARAMETER	SUMMARY PERIOD	NUMBER OF AUDITS	PROBABILITY LIMITS LEVEL 1 +95%	LEVEL 1 -95%	LEVEL 2 +95%	LEVEL 2 -95%	LEVEL 3 +95%	LEVEL 3 -95%	LEVEL 4 +95%	LEVEL 4 -95%
SITES OPERATED BY COOK COUNTY DEPARTMENT OF ENVIRONMENTAL CONTROL										
Sulfur Dioxide	1st Quarter	5	4	-3	3	-1	4	-4		
	2nd Quarter	3	14	-10	15	-12	10	-10		
	3rd Quarter	3	8	-3	9	-3	8	-2		
	4th Quarter	6	9	-2	10	-10	4	-10		
	Year	17	9	-4	9	-6	6	-6		
Ozone	1st Quarter	3	7	-3	3	-2	3	-2		
	2nd Quarter	10	8	-3	5	-6	4	-6		
	3rd Quarter	10	5	-6	2	-4	3	-4		
	4th Quarter	10	6	-7	5	-3	4	-2		
	Year	33	6	-5	4	-4	4	-4		
Carbon Monoxide	1st Quarter	3	8	-3	10	-4	6	-2		
	2nd Quarter	3	4	-7	4	-6	0	-2		
	3rd Quarter	2	7	+2	6	-1	3	0		
	4th Quarter	3	7	-2	1	-2	0	-1		
	Year	11	6	-2	5	-3	2	-1		
Nitrogen Dioxide	1st Quarter	4	2	+1	5	-2	5	-1		
	2nd Quarter	4	1	-3	1	-3	2	-4		
	3rd Quarter	2	2	-1	1	+1	2	0		
	4th Quarter	3	1	-2	4	-8	6	-8		
	Year	13	2	-1	3	-3	4	-3		
Inhalable Particulate PM_{10}	1st Quarter	9			-4	-9				
	2nd Quarter	9			7	+2				
	3rd Quarter	5			5	+1				
	4th Quarter	9			7	-5				
	Year	32			4	-3				
Lead	1st Quarter	3	6	-4	4	-7				
	2nd Quarter	3	9	-5	-3	-5				
	3rd Quarter	3	1	0	-4	-6				
	4th Quarter	3	6	0	-2	-4				
	Year	12	6	-2	-1	-6				

1. Less than two audits were performed for this parameter during the quarter. Probability Limits could not be calculated.

APPENDIX D
POINT SOURCE EMISSION INVENTORY SUMMARY TABLES

Table D1

1999
Point Source Emission Distribution (Tons/Year)

Category	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
External Fuel Combustion					
Electric Generation	17,048.2	856,765.9	294,926.5	1,247.4	12,184.8
Industrial	5,272.8	82,081.6	48,406.4	3,008.4	16,960.3
Commercial/Institutional	884.2	12,968.5	6,330.9	258.4	2,659.1
Space Heating	25.6	163.0	637.3	25.7	133.1
Internal Fuel Combustion					
Electric Generation	294.8	421.4	4,769.2	349.8	2,523.1
Industrial	112.6	213.1	18,508.8	2,000.7	4,156.9
Commercial/Institutional	20.2	16.8	494.9	35.3	179.1
Engine Testing	38.1	27.2	492.3	93.2	421.5
Off Highway 2-stroke Gasoline Engines	0.1	0.3	4.3	4.5	20.0
Fugitive Emissions	0.1	0.3	2.9	0.1	1.0
Industrial Processes					
Chemical Manufacturing	4,121.5	16,470.5	1,570.1	13,515.1	15,661.8
Food/Agriculture	18,164.8	500.2	615.1	8,662.8	250.1
Primary Metal Production	6,460.6	4,301.2	4,611.4	3,089.0	51,038.6
Secondary Metal Production	7,741.9	3,682.0	2,308.0	1,290.3	2,755.8
Mineral Products	20,767.2	15,391.5	11,237.8	1,331.1	2,697.1
Petroleum Industry	2,929.3	87,880.5	20,695.3	6,066.9	1,620.5
Paper and wood Products	780.6	0.0	1.2	139.1	1.1
Rubber and Plastic Products	608.5	0.7	57.7	4,543.1	37.4
Fabricated Metal Products	1,222.7	213.5	455.6	1,446.5	1,192.7
Oil and Gas Production	7.1	150.0	166.5	574.3	214.9
Miscelaneous Machinery	98.1	2.7	16.5	113.0	6.1
Electrical Equipment	25.4	0.5	1.2	213.0	0.6
Transportation Equipment	94.7	0.0	1.9	21.8	1.2
Health Services	1.9	0.6	1.1	80.6	2.1
Leather and Leather Products	48.7	0.0	0.0	69.2	0.0
Textile Products	10.2	0.0	4.4	4.9	0.9
Printing/Publishing (typesetting)	0.3	0.0	0.0	0.0	0.0
Process Cooling	16.2	0.0	0.0	0.	0. 0
In-Process Fuel Use	252.9	3,517.5	2,373.5	232.8	796.8
Miscellaneous Manufacturing	420.8	92.2	275.6	301.2	188.3
Organic Solvent Emissins					
Organic Solvent Use	48.6	0.0	2.7	1,784.5	0.6
Surface Coating Operations	965.1	58.3	1,080.0	22,854.7	157.1
Petroleum Product Storage	55.6	12.6	4.4	5,805.0	74.8
Bulk Terminals/Plants	3.4	0.0	53.7	1,744.6	20.1
Printing/Publishing	127.5	0.1	160.1	10,930.4	15.0
Petroleum Marketing/Transport	0.6	0.0	3.1	1,221.5	0.4
Organic Chemical Storage (large)	13.7	0.0	0.6	769.4	0.4
Organic Chemical Transportation	12.4	0.0	10.8	64.3	0.7
Dry Cleaning (petroleum based)	0.0	0.0	0.0	361.6	0.0
Organic Chemical Storage (small)	0.0	0.0	0.0	1.9	0.0
Organic Solvent Evaporation	52.4	77.3	104.5	3,657.1	213.5

Table D1

1999
Point Source Emission Distribution (Tons/Year)

Category	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Solid Waste Disposal					
Government	275.2	216.9	800.8	215.4	1,294.4
Commercial/Institutional	362.1	36.2	138.3	68.8	664.8
Industrial	642.7	562.1	665.1	326.8	2,758.8
Site Remediation	2.7	3.2	1.6	454.0	0.4
***MACT Processes**					
Food and Agriculture Processes	0.0	0.0	0.0	0.1	0.0
Styrene or Methacrylate Based Resins	5.0	0.0	0.0	16.0	0.0
Cellulose Based Resins	0.2	0.0	0.0	0.0	0.0
Alkyd Resin Production	0.0	0.0	0.0	28.6	0.0
Vinyl Based Resins	276.3	0.1	0.0	84.6	0.0
Miscellaneous Polymers	0.9	0.0	0.0	0.0	0.0
Fibers Production	0.0	0.0	0.0	0.3	0.0
Consumer Product Manufacturing	0.7	0.0	0.0	9.6	0.0
Facilities					
Paint Stripper Use	0.9	0.0	0.0	3.8	0.0
Totals	**90,316.4**	**1,085,828.3**	**421,992.9**	**99,121.32**	**120,905.9**

* MACT stands for Maximum Achievable Control Technology.

Table D2

1999

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Adams	619.0	6,269.0	1,053.4	2,275.6	353.9
Alexander	475.1	460.5	258.7	63.3	36.0
Bond	93.6	5.3	39.0	25.5	144.8
Boone	200.2	620.2	290.2	1,211.6	106.1
Brown	7.5	0.0	1.7	0.3	0.2
Bureau	318.6	15.1	68.5	134.4	28.8
Calhoun	24.1	0.0	0.0	0.0	0.0
Carroll	235.5	121.4	60.3	174.4	59.1
Cass	152.5	0.1	23.4	13.9	7.4
Champaign	829.6	2,139.0	2,379.8	1,090.0	884.6
Christian	1,161.6	79,497.6	26,171.2	170.2	652.6
Clark	173.3	2.0	13.8	181.4	11.7
Clay	84.5	6.2	9.6	199.3	6.7
Clinton	113.0	362.7	1,302.1	180.3	215.0
Coles	360.8	119.8	283.2	1,343.7	280.3
Cook	16,198.2	41,691.3	33,966.1	25,987.8	53,950.9
Crawford	899.3	23,659.0	8,448.8	928.3	544.4
Cumberland	53.0	2.1	4.5	30.0	7.2
DeKalb	223.2	7.0	114.5	376.7	48.1
DeWitt	364.0	19.4	253.4	93.0	97.1
Douglas	802.3	14,619.7	5,597.0	755.8	356.9
DuPage	1,089.0	432.0	1,739.1	2,786.0	938.7
Edgar	589.9	528.8	174.1	404.8	97.2
Edwards	56.7	0.0	0.1	187.4	0.5
Effingham	178.9	3.2	90.0	1,110.5	21.7
Fayette	254.1	24.1	237.9	291.5	44.3
Ford	350.2	2.3	101.6	802.3	32.2
Franklin	101.9	3.7	23.7	215.3	10.2
Fulton	574.6	2,252.5	6,599.6	74.4	292.6
Gallatin	76.0	1.0	0.7	7.2	0.2
Greene	74.7	0.0	2.5	36.4	0.3
Grundy	831.2	1,490.4	5,551.3	1,301.0	3,417.0
Hamilton	46.1	0.6	4.3	7.0	1.1
Hancock	281.5	4.8	83.1	15.6	19.0

Table D2

1999

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Hardin	100.7	35.5	27.1	3.6	11.8
Henderson	140.2	0.1	9.4	10.4	4.9
Henry	291.5	26.9	5,050.9	777.6	1,346.4
Iroquois	555.6	16.5	35.1	89.6	146.1
Jackson	544.9	27,626.0	3,698.0	1,061.6	545.3
Jasper	1,111.6	15,173.8	10,965.8	121.7	686.4
Jefferson	531.2	200.3	189.8	440.0	62.4
Jersey	56.6	0.0	0.0	17.6	0.0
Jo Daviess	456.5	5.7	416.0	1,667.0	1,986.0
Johnson	123.4	382.7	44.9	24.1	35.7
Kane	934.0	301.9	1,177.2	2,187.9	569.2
Kankakee	1,109.8	61.6	1,771.0	1,362.8	717.7
Kendall	176.7	151.8	1,278.1	296.4	312.8
Knox	212.0	57.0	311.5	239.5	45.8
Lake	2,405.9	22,851.9	12,895.7	1,624.3	1,733.7
La Salle	3,180.9	1,239.6	5,882.6	1,893.0	694.6
Lawrence	56.7	32.0	38.5	166.9	13.7
Lee	623.8	2,977.6	789.9	463.6	230.2
Livingston	722.1	26.3	1,101.9	1,001.9	853.7
Logan	668.1	1,541.9	520.6	117.0	87.0
McDonough	261.5	1,572.5	278.4	115.0	94.4
McHenry	607.3	146.8	1,034.4	1,121.2	366.4
McLean	907.2	60.6	891.2	2,957.0	310.3
Macon	4,492.3	28,873.4	9,204.3	7,284.2	8,004.0
Macoupin	204.8	4.7	15.5	113.0	8.0
Madison	6,891.0	62,678.3	26,744.8	5,267.5	19,919.0
Marion	185.4	4.7	119.3	1,353.8	70.0
Marshall	409.9	1,426.0	309.6	396.8	35.1
Mason	552.9	13,016.5	5,443.1	55.8	304.9
Massac	5,210.5	40,086.4	13,233.1	418.5	1,479.9
Menard	80.2	0.0	0.5	17.3	18.9
Mercer	215.2	0.4	3.7	19.7	1.0
Monroe	133.9	0.0	10.3	37.8	6.4
Montgomery	811.6	52,800.3	30,604.3	112.4	547.5

Table D2

1999

Estimated County Stationary Point Source Emissions (Tons/Year)

County	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
Morgan	1,117.2	27,580.8	5,013.9	728.7	414.5
Moultrie	161.8	68.6	132.2	294.0	32.1
Ogle	380.7	37.9	619.5	1,191.3	314.1
Peoria	2,446.0	84,652.8	17,657.6	2,596.4	1,408.8
Perry	114.8	9.7	16.7	131.9	8.2
Piatt	268.5	0.6	1,876.9	120.4	276.1
Pike	218.0	2,767.6	840.6	32.9	123.7
Pope	0.0	0.0	0.0	2.1	0.0
Pulaski	117.9	416.6	53.5	0.3	0.2
Putnam	690.7	48,454.1	5,308.9	115.1	251.9
Randolph	3,287.3	273,965.9	58,102.0	286.9	1,223.5
Richland	56.3	0.5	21.9	89.1	11.2
Rock Island	875.8	1,715.5	892.7	2,864.0	848.7
St. Clair	1,924.1	3,193.5	770.8	1,581.1	213.2
Saline	273.9	9.6	6.2	12.2	20.5
Sangamon	1,114.0	49,668.1	12,414.5	611.3	853.6
Schuyler	89.1	0.0	25.2	12.2	0.4
Scott	107.0	8.2	28.3	29.2	8.9
Shelby	233.0	0.4	6.1	68.6	2.3
Stark	63.8	0.0	0.2	9.6	0.2
Stephenson	212.7	3.4	166.2	1,156.5	137.6
Tazewell	2,976.0	28,748.0	34,086.6	668.9	1,146.8
Union	73.9	865.6	67.4	21.8	53.7
Vermilion	1,327.5	12,583.7	3,216.5	1,712.7	669.8
Wabash	296.9	198.3	106.4	29.6	29.0
Warren	263.4	271.6	71.5	47.7	43.7
Washington	320.3	0.1	38.1	188.8	17.8
Wayne	45.3	88.7	505.1	189.0	77.6
White	83.8	1.7	6.0	70.1	1.2
Whiteside	660.2	162.9	349.1	148.1	1,302.8
Will	6,102.2	90,403.0	42,345.	6,247.6	6,688.5
Williamson	456.6	12,087.3	7,264.8	257.4	213.0
Winnebago	875.0	112.7	919.4	2,113.1	579.0
Woodford	222.9	10.0	18.7	181.7	17.2

Table D3

Annual Estimated Emissions Trends (Tons)

Year	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
1981	276,529	1,577,992	826,427	270,814	240,421
1982	184,716	1,404,040	693,054	233,951	163,704
1983	185,931	1,363,292	759,453	207,405	144,622
1984	204,490	1,435,066	746,367	197,418	110,922
1985	174,102	1,406,300	715,556	191,070	107,876
1986	164,246	1,400,761	676,181	180,148	109,777
1987	166,292	1,379,407	644,511	176,406	98,213
1988	162,124	1,393,628	653,521	165,792	127,758
1989	212,778	1,254,474	610,214	193,499	132,214
1990	266,888	1,272,445	623,466	170,378	134,744
1991	220,903	1,239,690	619,161	154,008	148,667
1992	163,529	1,228,949	610,214	156,867	129,054
1993	142,123	1,170,549	556,460	152,288	130,097
1994	133,275	1,158,555	555,893	140,492	127,848
1995	119,726	1,273,786	505,966	141,381	127,661
1996	105,842	1,183,278	495,267	139,445	130,040
1997	100,038	1,197,404	510,729	136,541	117,046
1998	99,619	1,196,461	509,676	134,924	108,117
1999	90,316	1,085,828	421,993	99,121	120,906

Table D4

Annual Source Reported Emissions Trends (Tons)

Year	Particulate Matter	Sulfur Dioxide	Nitrogen Oxides	Volatile Organic Material	Carbon Monoxide
1992	95,903	1,045,101	381,939	143,755	112,388
1993	90,322	1,001,123	418,211	108,809	113,772
1994	88,916	967,213	404,488	108,777	116,178
1995	67,048	812,284	367,803	102,942	160,361
1996	63,766	914,276	407,654	86,939	84,248
1997	57,166	974,197	404,291	75,812	72,300
1998	61,113	964,250	376,662	77,572	79,506

APPENDIX E

THE BUREAU OF AIR/ DIVISION OF AIR POLLUTION CONTROL

Organization and Programs

The Bureau of Air consists of two divisions: the Division of Air Pollution Control and the Division of Vehicle Inspection and Maintenance. The focus of this section is on the programs of the Division of Air Pollution Control which is responsible for developing, implementing and enforcing regulations to assure that the air we breathe is clean and healthful. This mission is accomplished by finding, correcting and controlling air pollution hazards. The Division of Air Pollution Control also works to prevent air quality problems from occurring in areas which have clean air.

The basic strategy to improve air quality is to control the pollutants which are emitted by industry and motor vehicles. This strategy requires the IEPA to monitor the air, identify emission sources, impose limitations on the amount of emissions which can be released to the air and take the necessary enforcement action against violators.

The Division of Air Pollution Control is divided into five sections: Air Monitoring, Air Quality Planning, Compliance and Systems Management, Permits, and Field Operations. Each of these sections is briefly described below.

Air Monitoring

The Division of Air Pollution Control operates a statewide air quality monitoring network which includes more than 200 monitors. The Air Monitoring Section is responsible for the maintenance of this network, which operates year round monitoring the quality of the air that we breathe.

The IEPA monitors the air for a variety of pollutants including particulate matter, sulfur dioxide, ozone, carbon monoxide, lead and nitrogen dioxide. Specialized sampling projects for other hazardous pollutants are also conducted by the Air Monitoring Section.

Illinois residents can be proud of the IEPA's record of efficiency in data collection. The system ranks as one of the best in the nation with over 90 percent efficiency in the collection of high quality data. This high efficiency rate guarantees that the network is operating with a minimum amount of "down-time" thereby providing the IEPA with a complete and accurate description of air quality in Illinois.

The Air Monitoring Section is also responsible for validating and summarizing the data in this report. It provides notification of air quality exceedances and issues any episodes as required. Special air quality studies are performed which identify pollution trends and evaluate special air quality problems. The Section additionally oversees the source emission monitoring program: continuous emission monitors (cems), stack testing, and excess emissions reporting.

Air Quality Planning

The Air Quality Planning Section is responsible for developing Agency programs which are designed to achieve and maintain National Ambient Air Quality Standards and to prevent deterioration of air quality. This is accomplished by:

- Assessment of strategies and technologies for the elimination or reduction of air pollutant emissions.
- Conducting and reviewing detailed air quality studies using computerized air quality models.

- Proposing and supporting regulatory revisions where they are necessary to attain or maintain healthful air quality.

- Coordination with local planning agencies to ensure compatibility of air quality programs between state and local jurisdictions.

Compliance and Systems Management

The Compliance and Systems Management Section provides Management oversight for all aspects of the compliance program, develops and implements the information management and office automation aspects of the Bureau of Air, and assists in the compilation of the stationary source inventory.

The work of the section is currently focused on the following areas:

- Formulating and interpreting policy regarding the Bureau's Air Pollution Compliance and Enforcement Program.

- Coordinating the Air Pollution Compliance and Enforcement Program with USEPA's Compliance and Enforcement Program.

- Coordinating, through the Bureau's Compliance Decision Group, the work of the Bureau's staff in order to provide an effective and efficient compliance program.

- Develop a comprehensive plan for integrated information management systems for the Bureau.

- Design, develop, and implement information management solutions to effectively and efficiently utilize the Bureau's data resources.

- Administer the Bureau's hardware and software resources.

- Establish on-going performance measurement criteria to evaluate and approve the quality of the Bureau's Stationary Source Inventory.

- Evaluate the Annual Emission Reports provided by Illinois industry.

- Provide training and technical support to personnel regarding the compilation and maintenance of the stationary source inventory system and the effective use of the Bureau's computer resources.

Permits

Permits are required in Illinois prior to construction and operation of emission sources and control equipment. The permit program provides a consistent and systemic way of ensuring that air emission sources are built and operated in compliance with air pollution control regulations.

In a permit application the IEPA requires: a description of the emission source, a list of types and amounts of the contaminants which will be emitted, and a description of the emission control equipment to be utilized. This information is used to determine if the emissions comply with standards adopted by the Illinois Pollution Control Board. Operating permits are granted for periods up to five years, after which they must be renewed. Operating permits for smaller facilities may run indefinitely. When a facility constructs a new emission source or makes modifications to existing emission sources, it must apply for a new construction permit.

Large sources also need a Federal Operating Permit which is administered by the IEPA. Under the Clean Air Act Permit Program (CAAPP) these large sources will be required to consolidate all of their existing State operating permits into one permit which will be available for public review and is subject to Federal oversight.

Field Operations

The Field Operations Section investigates sources of air pollution and works with industry to control air pollution. The major functions of the Field Operations Section

include locating and identifying sources of air pollution, determining the amount of pollution emitted and verifying the information which industry submits when applying for a permit. Field Operations also initiates much of the IEPA's enforcement activities when violations are discovered. Approximately 3,000 investigations and inspections are conducted each year.

A directory of the Division of Air Pollution Control follows.

Table E1

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