COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

1998

AMBIENT AIR QUALITY MONITORING REPORT

DIVISION OF AIR QUALITY MONITORING
400 MARKET STREET
HARRISBURG, PA 17105

For more information, visit us through the Pennsylvania website at www.pa.state.us, or visit DEP directly at www.dep.state.pa.us

Comments or questions regarding this document should be directed to:
Jeffrey Miller at 717-787-9479 or miller.jeffrey@dep.state.pa.us

2700-BK-DEP0407

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EXECUTIVE SUMMARY

The Pennsylvania Department of Environmental Protection (DEP) has a constitutional obligation to protect the right to clean air for all Pennsylvanians. DEP's Bureau of Air Quality fulfills this obligation by regulating emissions from thousands of sources, like factories and power plants. Monitoring air quality statewide, assisting companies with compliance, investigating complaints and taking enforcement action against violators are all part of DEP's work.

As DEP implements the federal Clean Air Act Amendments of 1990, the study of past and present air quality data will be a crucial component of program planning and air pollution reduction strategies.

Ambient Air Monitoring

The goals of Pennsylvania's ambient air monitoring program are to evaluate compliance with federal and state air quality standards, provide real-time monitoring of air pollution episodes, develop data for trend analysis, develop and implement air quality regulations and provide information to the public on daily air quality conditions in their area.

DEP monitors air quality in areas having high population density, high levels of expected contaminants or a combination of the two. The majority of the monitoring takes place in the 13 air basins of the Commonwealth. Air basins are geographic areas, usually valleys, where air tends to stagnate. The air basins were designated by the state legislature and written into the state code.

DEP does not generally monitor air quality in Allegheny or Philadelphia counties. Monitoring in these areas is performed by independent health agencies. An exception exists in Allegheny County, where DEP has an ambient monitoring site as part of an exhibit at the Carnegie Science Center.

Air Quality Index

An Air Quality Index (AQI) is published daily for 17 areas in Pennsylvania as a means of reporting daily air quality to the general public. The AQI records levels of five common air contaminants - carbon monoxide, sulfur dioxide, particulate matter (PM_{10}), ozone and nitrogen dioxide. It was developed by the U.S. Environmental Protection Agency to standardize air pollution ratings. Real time monitoring and current PSI information is also available on DEP's website at www.dep.state.pa.us (choose Subjects / Air Quality).

Quality Assurance Program

DEP's Bureau of Air Quality conducts regularly scheduled performance audits and precision checks on the air monitoring equipment. Quarterly performance audits are conducted for the purpose of assessing data accuracy on carbon monoxide, sulfur dioxide, ozone, total suspended particulate matter (TSP), PM_{10} suspended particulate matter and lead monitoring systems.

Overview of Air Quality Data

Data collected by DEP can generally be divided into two groups: particulate matter and gaseous pollutants. The department uses health-based National Ambient Air Quality Standards (NAAQS) as well as several standards of its own, such as hydrogen sulfide.

Total Suspended Particulate and PM_{10} Suspended Particulate Matter

Particulate matter is the solid or liquid matter in the air formed by smoke, dust, fly ash or condensing vapors that can be suspended in the air for long periods of time. Particulate emissions result primarily from industrial processes and fuel combustion. The smaller of these particles are breathed into the lungs where they can aggravate or cause respiratory ailments or carry other pollutants into the lungs.

The federal ambient air quality standard for particulate matter was revised to reflect the adverse health effects of particulate matter less than 10 microns in size (PM_{10}). PM_{10} measurements have replaced the total suspended particulate (TSP) standard because many of the larger particles included in the measurement do not penetrate into the lungs and have little health effect. PM_{10} measurements appear to represent essentially all of the particulate emissions from transportation sources and most of the emissions in the other traditional categories. Thus there is no federal or state air quality standard for TSP.

The annual mean composite of all areas of the Commonwealth has demonstrated a 20 percent improvement in TSP levels over the last 10 years. There were no sites in the Commonwealth that exceeded the former annual or 24-hour air quality standard in 1998.

PM_{10} monitoring began in the Commonwealth in 1985, with all sites continuing to meet the air quality standards. DEP completed a major commitment to install continuous PM_{10} instrumentation in all air basins in 1996. PM_{10} levels have remained fairly constant over the last 10 years with an average 4 percent improvement over the last five years. Average PM_{10} levels have improved 10 percent since 1989, when monitoring became established in all areas of the Commonwealth.

Sulfates

Sulfates in the atmosphere are of two types: primary and secondary. Primary sulfates are emitted directly into the atmosphere from industrial processes. Secondary sulfates are formed in sunlight.

Studies have shown significant correlation between high sulfate levels and illness. Sulfates also reduce visibility and contribute to acid rain. The high level of sulfates during the summer is due to sulfate formation in sunlight. Sulfates continue to be a problem in Pennsylvania.

The Commonwealth's former 30-day air quality standard was violated in 1998 at all monitoring stations. Sulfate levels have improved 8 percent over the last 10 years.

Lead

Lead is a metal that is highly toxic when ingested or inhaled. It is a suspected carcinogen of the lungs and kidneys and has adverse effects on cardio, nervous and renal systems. Lead is emitted into the atmosphere by industrial processes.

Lead levels in the Commonwealth have met the federal standards for the past 10 years and have improved by 50 percent. Relatively little improvements are now seen between years across the Commonwealth in most of the air basins that have no lead industrial sources since the removal of lead from gasoline.

Nitrates

Nitrates are particulate compounds that form in the atmosphere from the oxidation of nitrogen gases. They represent a significant portion of the finer particulate that can be inhaled into the lungs and which affect visibility.

Levels of nitrates are relatively constant across the Commonwealth. There are no long- or short-term air quality standards for nitrates.

Sulfur Dioxide

Sulfur dioxide is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning coal or oil containing sulfur. Health problems caused by high exposures to sulfur dioxide include impairment of breathing and respiratory illnesses. Sulfur dioxide damages trees, plants and agricultural crops and is a precursor to acid rain.

All sites met the air quality standards. Sulfur dioxide levels have improved slightly or remained the same over the last 10-year period. The 1998 averages continue to be below 50 percent of the annual ambient air quality standard. The sulfur dioxide seasonal trend is directly related to space heating requirements.

Ozone

Ozone, or photochemical smog, is not emitted into the atmosphere but is formed by reactions of other pollutants. The primary pollutants entering into this reaction -- volatile organic compounds (VOC) and oxides of nitrogen (NO_x) -- create ozone in the presence of sunlight. Ozone is a strong irritant to the eyes and upper respiratory system and also damages crops.

Ozone is erratic by nature and levels fluctuate depending on weather conditions. Ozone levels are consistently higher during the summer months, with the ozone monitoring season being April 1 to October 31. Since 1989, ozone levels have shown little or no improvement. The improvements that are seen in ozone concentrations can be attributed in part to controls on VOCs and gasoline volatility. Ozone concentrations (using all monitors in Pennsylvania) exceeded the 1-hour daily air quality standard on 10 days and exceeded the proposed 8-hour daily maximum level of 84 parts per billion (ppb) on 58 days during 1998.

Oxides of Nitrogen

Oxides of nitrogen (NO_x) are a class of pollutants formed when fuel is burned at a very high temperature. It is predominately emitted from vehicles. Although there is no air quality standard for NO_x, the level of this pollutant is of concern due to its role in the formation of ozone and acid rain.

Nitrogen Dioxide

Nitrogen dioxide is a highly toxic, reddish brown gas that is created primarily from fuel combustion in industrial sources and vehicles. It creates an odorous haze that causes eye and sinus irritation, blocks natural sunlight and reduces visibility. It can severely irritate respiratory illnesses. Nitrogen dioxide contributes to the creation of acid rain and adversely impacts forests and other ecosystems.

No sites in Pennsylvania exceeded the annual air quality standard in 1998. Nitrogen dioxide levels have improved on average 15 percent over the last ten years.

Carbon Monoxide

Carbon monoxide is a poisonous gas that, when introduced into the bloodstream, inhibits the delivery of oxygen to body tissue. Exposure creates a severe health risk to individuals with cardiovascular disease. The largest man-made source of carbon monoxide is vehicle emissions. This pollutant is only a health concern in areas of high traffic density or near industrial sources.

All DEP sites in the Commonwealth have met the federal air quality standards for the last 10 years. Carbon monoxide levels have seen a long-term improvement of 40 percent from levels in 1989.

For additional information about Pennsylvania's air quality programs, visit the DEP website www.dep.state.pa.us (choose Subjects / Air Quality).

INTRODUCTION

The goals of the ambient air monitoring program in Pennsylvania are to judge compliance with federal and state air quality standards, provide real-time monitoring of air pollution episodes, provide data for trend analysis, regulation evaluation and planning and provide public information daily on air quality.

Air quality monitoring to judge compliance with air quality standards in Pennsylvania is conducted by three agencies: DEP's Bureau of Air Quality; the Allegheny County Health Department; and Philadelphia Air Management Services.

This report contains summaries of the air quality data collected by DEP's Bureau of Air Quality in calendar year 1998. Data from Philadelphia or Allegheny counties can be obtained by contacting those agencies directly (mailing addresses and telephone numbers for all three agencies are given in Appendix B).

The monitoring strategy of DEP is to place monitors in areas having high population density, high levels of contaminants or a combination of the two. The majority of all monitoring efforts take place in the "air basins" of the Commonwealth. These "air basins" have been defined in the bureau's regulations and consist of the following 13 areas:

Allegheny County Air Basin
Allentown - Bethlehem - Easton Air Basin
Erie Air Basin
Harrisburg Air Basin
Johnstown Air Basin
Lancaster Air Basin
Lower Beaver Valley Air Basin
Monongahela Valley Air Basin
Reading Air Basin
Scranton - Wilkes-Barre Air Basin
Southeast Pennsylvania Air Basin
Upper Beaver Valley Air Basin
York Air Basin

Air monitoring surveillance is conducted in all 13 air basins. Allegheny County conducts its own monitoring program, and Philadelphia, which also conducts its own monitoring program, is part of the Southeast Pennsylvania Air Basin. In addition to the 13 air basins in which DEP conducts surveillance, there are three additional non-air basin areas, which have historically significant monitoring programs: Altoona, Williamsport and the Shenango Valley. DEP performs monitoring in Allegheny County at the Carnegie Science Center in Pittsburgh as part of an air quality exhibit.

DEP operates two air monitoring networks in the Commonwealth: the Pennsylvania Air Quality Surveillance System (PAQSS), for high volume particulate sampling and the Commonwealth of Pennsylvania Air Monitoring System (COPAMS) for continuous pollutant sampling.

The discrete total suspended particulate network consists of 26 monitoring sites. Each site sampled total suspended particulate matter (TSP) on a schedule of once every six days. Selected filters are also analyzed for sulfates, nitrates and lead. In addition, discrete sampling is also conducted at 17 sites for suspended particulate matter of 10 microns or less in size (PM_{10}) in 1998. No additional analysis is performed on the PM_{10} sample filters.

The COPAMS network is a totally automatic, microprocessor controlled system which consists of 44 remote stations throughout the Commonwealth. These remote stations are connected by dedicated or dial-up telephone lines to a central computer system that collects the raw data. Each station measures selected parameters such as sulfur dioxide, hydrogen sulfide, ozone, carbon monoxide, nitrogen dioxide, oxides of nitrogen, continuous PM_{10}, wind speed, wind direction (vector averaged and sigma theta), ambient temperature and solar radiation.

The sampling locations for DEP's air monitoring sites and the pollutants monitored at the site are listed in Appendix C.

In addition to the normal air monitoring surveillance conducted by DEP, two additional cooperative monitoring efforts continued this year. DEP has renewed a cooperative agreement with Pennsylvania State University's (PSU) Department of Plant Pathology, to conduct ozone monitoring in three remote areas of the state. The collected ozone data will be used to determine possible effects to forests and crops and assess ozone transport in rural Pennsylvania. The sites are located in the Moshannon State Forest (Clearfield County), Tiadaghton (Lycoming County), and at the Department of Conservation and Natural Resource Penn Nursery (Centre County).

To continue the efforts to understand ozone formation and transport by the North American Research Strategy for Tropospheric Ozone (NARSTO), DEP agreed to take over monitoring at three NARSTO sites: Holbrook, Greene County; Arendtsville, Adams County; and Kunkletown, Monroe County. Each NARSTO site monitors selected parameters such as ozone, sulfur dioxide, carbon monoxide and nitrogen oxides.

CHAPTER 1
AIR QUALITY STANDARDS

One of the primary goals of the ambient air monitoring program is to obtain data to compare against air quality standards. Pennsylvania has adopted all of the National Ambient Air Quality Standards (NAAQS), as well as several standards of its own. These standards, designed to protect the public health and welfare, are shown in Tables 1-1 and 1-2.

In September 1997, the NAAQS for ozone was revised to add an 8-hour standard for those areas meeting the daily 1-hour maximum standard and a particulate matter standard for particles less than or equal to 2.5 microns ($PM_{2.5}$) was created.

There are two types of NAAQS standards: primary and secondary. Primary standards protect against adverse health effects, while secondary standards protect against welfare effects such as damage to crops, vegetation, buildings and decreased visibility.

Table 1-1. National Ambient Air Quality Standards (NAAQS)

	Primary (Health Related)		Secondary (Welfare Related)	
Pollutant	Type of Average	Standard Level Concentration	Type of Average	Standard Level Concentration
Carbon Monoxide	8-hour Running	9 ppm	No Secondary Standard	
	1-hour	35 ppm	No Secondary Standard	
Lead	Maximum Quarterly Average	1.5 $\mu g/m^3$	Same as Primary Standard	
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm	Same as Primary Standard	
Ozone	Maximum Daily 1-Hour Average	0.12 ppm	Same as Primary Standard	
	Fourth Average Daily Maximum 8-hour Running Mean (based on 3 years)	0.08 ppm	Same as Primary Standard	
Particulate Matter PM_{10}	Annual Arithmetic Mean	50 $\mu g/m^3$	Same as Primary Standard	
	24-hour	150 $\mu g/m^3$	Same as Primary Standard	
Particulate Matter $PM_{2.5}$	Annual Arithmetic Mean	15 $\mu g/m^3$	Same as Primary Standard	
	24-hour	65 $\mu g/m^3$	Same as Primary Standard	
Sulfur Dioxide	Annual Arithmetic Mean	0.03 ppm	3-hour	0.50 ppm
	24-hour	0.14 ppm		

Table 1-2. Pennsylvania Ambient Air Quality Standards

Pollutant	Type of Average	Standard Level Concentration
Beryllium	30-day	0.01 $\mu g/m^3$
Fluorides (total soluble, as [illegible])	24-hour	5 $\mu g/m^3$
Hydrogen Sulfide	24-hour	0.005 ppm
	1-hour	0.1 ppm

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CHAPTER 2
AIR QUALITY TRENDS AND COMPARISONS

TOTAL SUSPENDED PARTICULATE

Total suspended particulates (TSP) are the solid or liquid matter in air. Particles vary in size and may remain suspended in the air for periods ranging from seconds to months. Particulate emissions come from coal-burning power plants, industrial processes, mining operations, municipal waste incinerators and fuel combustion. They also are produced by natural sources such as forest fires and volcanoes. The smaller of these particles are breathed into the lungs where they can aggravate or cause respiratory ailments. These smaller particles can also carry other pollutants into the lungs.

The federal ambient air quality standard for particulate matter has been revised to reflect the adverse health effects of particulate matter less than 10 microns in size (PM_{10}). There is no federal or state air quality standard for TSP.

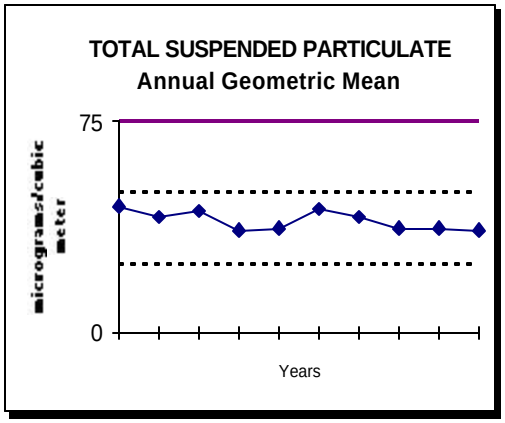


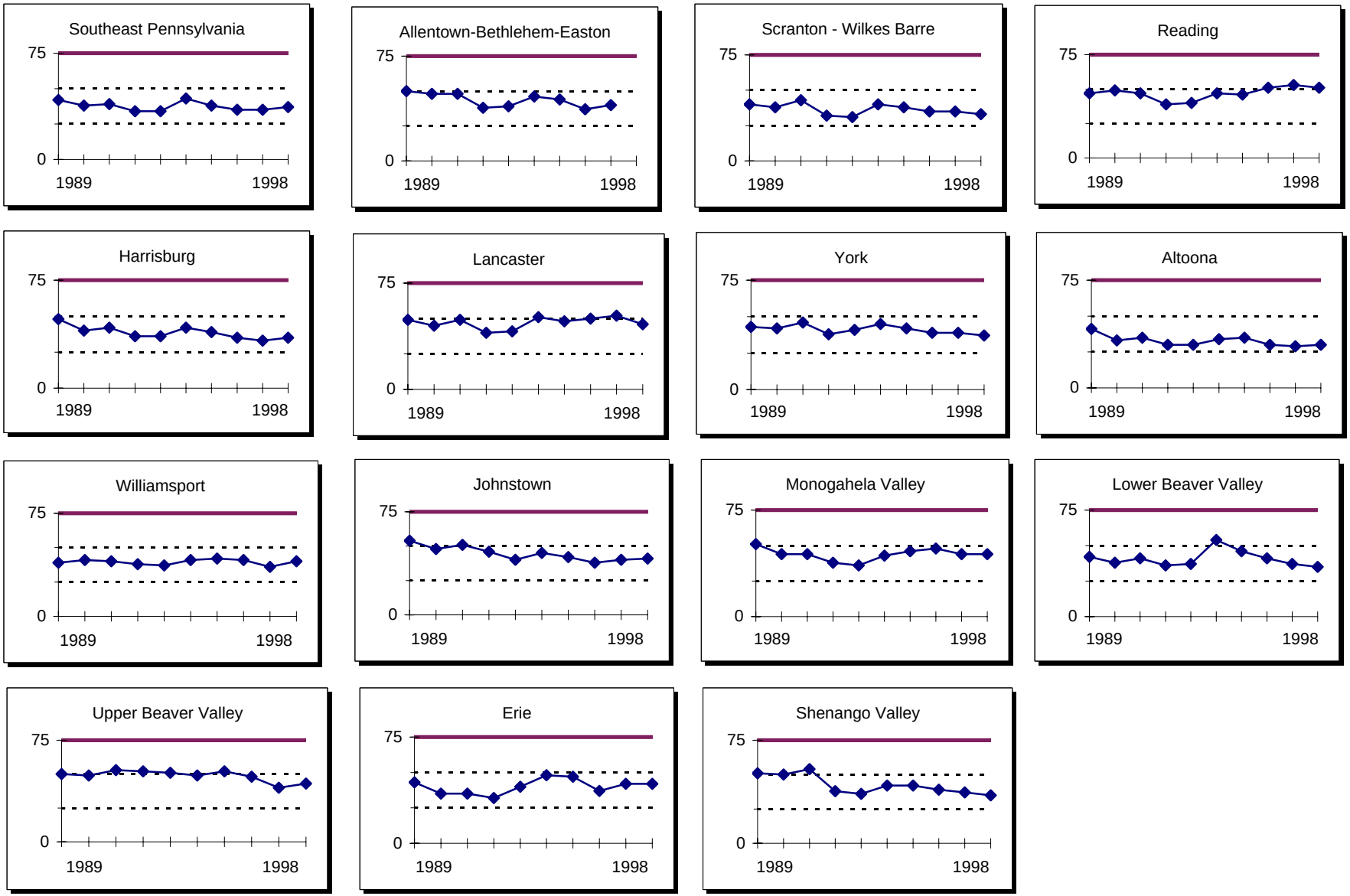
Figure 2-1. Trend in annual geometric mean TSP concentrations, 1989-1998.

Figure 2-1 shows a 20 percent decrease in annual geometric mean TSP concentrations measured across the Commonwealth between 1989 and 1998. The solid line represents the former annual primary air quality standard of 75 micrograms per cubic meter ($\mu g/m^3$).

Figure 2-2 shows the TSP trends over the last 10 years in various areas of the Commonwealth. The air basin and area's annual geometric means plotted consist of all stations which were operated during that year and which had at least 30 samples taken. Thus, stations that were moved or discontinued in the past are still included in the 10-year trend. The solid line represents the former annual primary air quality standard of 75 $\mu g/m^3$. The historical data that went into Figure 2-2 is contained in Appendix A. Table A-2 lists the annual geometric means over the last 10 years for each site that was monitored in 1998. The annual mean is shown if there were at least 30 samples collected that year.

The 1998 TSP summary is contained in Appendix A. Table A-1 tabulates the number of 24-hour samples collected, the annual geometric mean, the geometric standard deviation, the annual arithmetic mean, the three maximum 24-hour values with date of occurrence, the number of times the 24-hour values exceeded the former air quality standards, the minimum value and the number of 24-hour values in the indicated ranges. There were no sites in the Commonwealth that exceeded the former annual or 24-hour primary air quality standards in 1998. For comparison to the PM_{10} annual air quality standard, the TSP annual arithmetic mean was calculated by averaging the four quarterly arithmetic means.

FIGURE 2-2. TSP PARTICULATE TRENDS IN PENNSYLVANIA 1989 to 1998
ANNUAL GEOMETRIC MEANS (micrograms per cubic meter)



SULFATES

Sulfate particulate matter in the atmosphere is composed of two types: primary and secondary. Primary sulfates are emitted directly into the atmosphere from industrial processes. Secondary sulfates are formed in the atmosphere from other sulfur-containing compounds under mechanisms that involve photochemical processes.

Studies have shown significant correlation between high sulfate levels and increased illness absences. Sulfates are also of interest due to their effects of reducing visibility and contributing to acid rain.

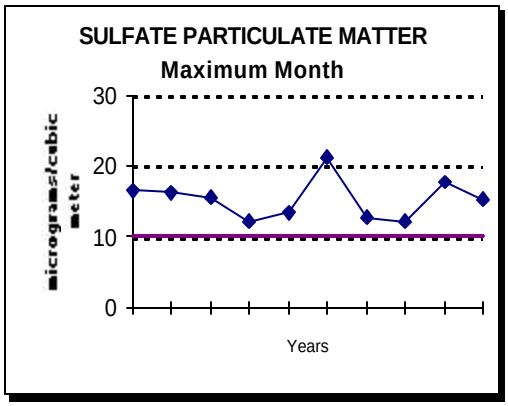


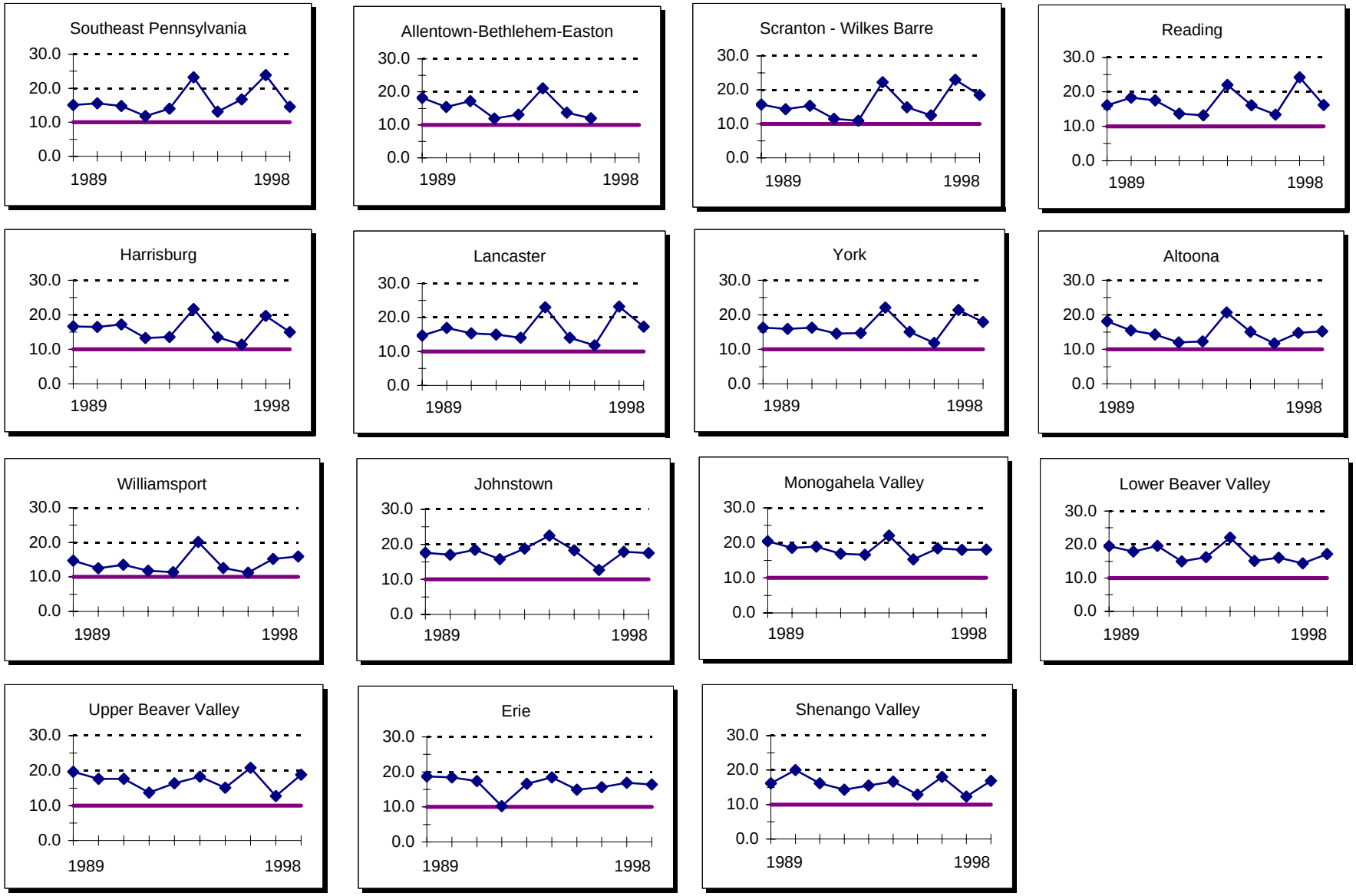
Figure 2-3. Trend in maximum monthly mean sulfate concentrations, 1989-1998.

Figure 2-3 shows the statewide trend of sulfate levels. Sulfate levels have show little long-term improvement, only 8 percent, over the last 10 years and have continually exceeded the former 30-day (monthly) Pennsylvania air quality standard. The solid line represents the former 30-day state air quality standard of 10 micrograms per cubic meter ($\mu g/m^3$). Sulfate continues to be a problem in 1998 with the former 30-day state air quality standard being exceeded at all monitoring sites.

Sulfate trends, which are represented by the maximum 30-day (monthly) mean, are shown in Figure 2-4 for the years 1989 to 1998. The solid line represents the former 30-day state air quality standard of 10 $\mu g/m^3$ on those graphs. Sulfate levels in all areas of the Commonwealth have shown no major improvement over the last 10 years with all areas exceeding the state air quality standard. The historical data that went into Figure 2-4 is contained in Appendix A. Table A-4 lists the maximum 30-day (monthly) means and the maximum 24-hour (daily) value over the last 10 years for each site that was monitored in 1998. The historical data is shown if there were at least 30 samples collected that year.

The 1998 sulfate summary is contained in Appendix A. Table A-3 tabulates the annual arithmetic mean, the number of 24-hour samples collected, the number of 30-day means greater than the air quality standard, the two maximum 30-day means and months of occurrence, the number of 24-hour values greater than the air quality standard and the two maximum 24-hour values with dates of occurrence. The large number of high sulfate levels during the summer is caused by the relationship between sulfate formation and photochemical processes. The maximum values will occur at the majority of sites during the period from May to September.

FIGURE 2-4. SULFATE PARTICULATE TRENDS IN PENNSYLVANIA 1989 to 1998
MAXIMUM MONTHLY MEANS (micrograms per cubic meter)



LEAD

Lead is a highly toxic metal when ingested or inhaled. It is a suspected carcinogen of the lungs and kidneys. It has adverse effects on the cardio, nervous and renal systems. Lead is emitted to the atmosphere by vehicles burning leaded fuel and from certain industrial processes, primarily battery manufacturers and lead smelters. As a result of the reduction in lead in gasoline, metals processing is the major source of lead emissions.

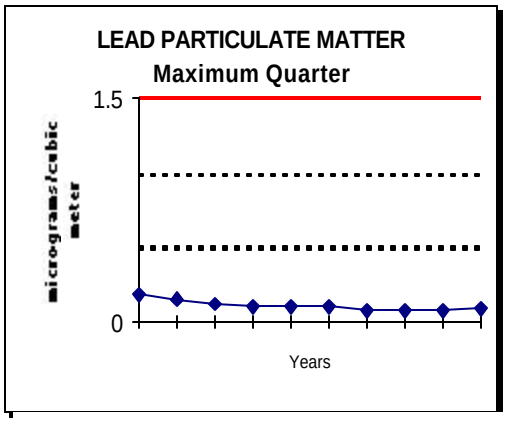


Figure 2-5. Trend in maximum quarterly average lead concentrations (including source-oriented sites), 1989-1998.

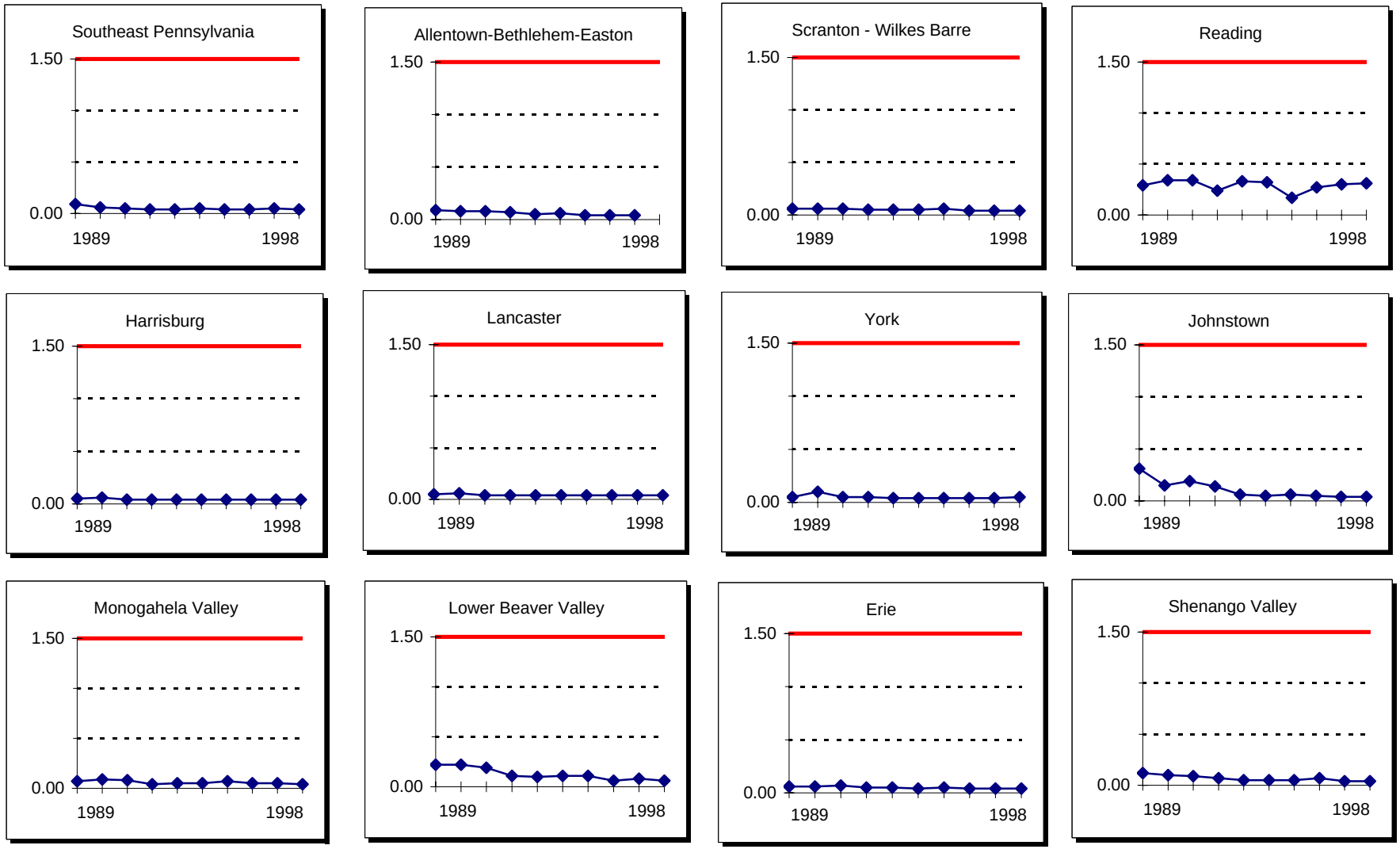
Lead concentrations for the years 1989 to 1998, are represented in Figure 2-5 by the maximum quarterly mean during the year for all monitors across the state. Lead concentrations have leveled off in the last 10 years after dramatic reductions seen in the late 1970s to early 1980s due to the implementation of lead-free gasoline. Figure 2-5 indicates that the maximum quarterly lead concentrations decreased 50 percent between 1989 and 1998. The solid line represents the quarterly mean air quality standard of 1.5 micrograms per cubic meter ($\mu g/m^3$).

Lead trends for the individual areas in the state are shown in Figure 2-6 for the years 1989 to 1998. The solid line represents the quarterly mean air quality standard of 1.5 $\mu g/m^3$ on these graphs.

The particulate lead standard was not exceeded at any monitoring site in 1998, including source-oriented sites. Quarterly averages for all stations that monitored lead in 1998 are shown in Appendix A, Table A-5, along with the number of samples taken in each quarter, the annual arithmetic mean and the total number of samples for the year.

Lead historical trend data is presented in Appendix A, Table A-6 for the years 1989 to 1998. The table contains the maximum quarterly mean for each year. Trend data is shown for all sites that operated in 1997. The quarterly mean is shown if there were at least 30 samples collected that year. No current monitoring site has exceeded the air quality standard in the last 10 years. Relatively high 1998 lead levels experienced at sites located in Laureldale and Lyons are due to the influence of lead point sources close to the monitoring sites, although these sites are well below the air quality standard.

FIGURE 2-6. LEAD PARTICULATE TRENDS IN PENNSYLVANIA 1989 to 1998
MAXIMUM QUARTERLY MEANS (micrograms per cubic meter)



NITRATES

Nitrates are particulate compounds that are usually formed in the atmosphere from the oxidation of oxides of nitrogen gases. They are of interest since they represent a significant portion of the finer particulates which can be inhaled into the lungs and which have a great impact on visibility. Nitrates are also being studied to determine their impact on acid precipitation.

Table A-7 in Appendix A summarizes nitrate data collected during 1998. The table contains the annual mean, the number of samples collected, the three maximum 24-hour values and the minimum value recorded. As seen from the annual means, the levels of nitrates in the Commonwealth are relatively constant from area to area.

There are no long-term or short-term air quality standards for nitrates.

PM_{10} SUSPENDED PARTICULATE MATTER

Particulate matter (PM) is solid matter or liquid droplets from smoke, dust, fly ash or condensing vapors that can be suspended in the air for long periods of time. Particulate matter in air with aerodynamic diameters less than 10 micrometers is PM_{10}. PM_{10} has replaced the total suspended particulate (TSP) standards in recognition of the fact that many of the larger particles included in TSP measurement (up to 45 micrometers) do not penetrate into the lungs and have very little effect on health. Consequently, the PM_{10} measurement is believed to be a better indicator of actual health risks.

PM_{10} appears to represent essentially all of the particulate emissions from transportation sources and most of the emissions in the other traditional categories. The standard for PM_{10} was adopted in July 1987. On July 18, 1997, EPA revised the particulate matter standards by adding new standards for $PM_{2.5}$ (particles less than or equal to 2.5 micrometers) and by adjusting the form of the PM_{10} 24-hour standard. One of the changes in the PM_{10} standard was the requirement to correct the flow based on local temperature and pressure conditions instead of using standard temperature (25 degrees C) and pressure (760 mm). This correction in flow calculations changes the way data is calculated. All discrete PM_{10} monitors were corrected to local conditions on January 1, 1998, while the continuous PM_{10} TEOM monitors were not changed until July 1, 1998.

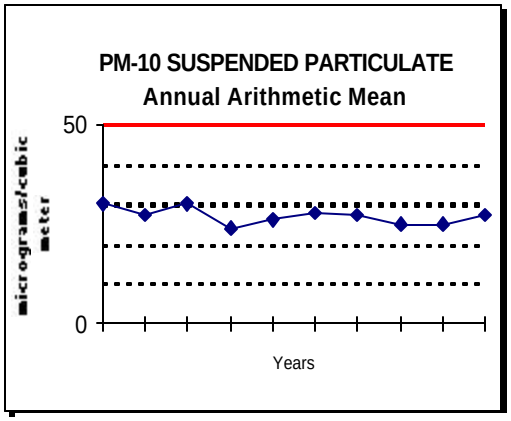


Figure 2-7. Trend in annual mean PM_{10} concentration, 1989-1998.

The Commonwealth measures PM_{10} concentrations using discrete (single sample) monitors which collect particulate matter on a filter for 24 hours and with a real-time instrument for measuring the PM_{10} particulate concentration. The tapered element oscillating microbalance (TEOM) is a gravimetric instrument that draws ambient air through a filter, constantly weighing the filter and calculating real-time PM_{10} concentrations. The analyzer reports 1-hour data, which are then used to calculate daily 24-hour averages (midnight to midnight), for comparison to the ambient air quality standard.

Figure 2-7 graphically represents the historical statewide PM_{10} trend for the years 1989 to 1998. Historical data is in units corrected to standard conditions while data in 1998 is corrected to local conditions. Monitored levels of PM_{10} levels in 1998 have improved 10 percent from levels observed in 1989 across the Commonwealth.

The map in Figure 2-8 shows the relationship of PM_{10} annual mean levels in the different counties across the Commonwealth where monitoring is performed. When there are multiple sites in the county the annual mean is an average of the sites. Only sites that have monitored 50 percent of the time during 1998 are included in this figure. All counties monitored by DEP are in attainment of the annual PM_{10} air quality standard.

The map in Figure 2-9 displays the highest second maximum 24-hour PM_{10} by county in 1998. All counties monitored by DEP are in attainment of the 24-hour PM_{10} air quality standard.

PM_{10} trends for the individual areas of the state are shown in Figure 2-10 for the years 1989 to 1998. The air basin or area averages consist of all stations which were operated during that year and had at least 30 discrete samples or 50 percent valid continuous data. PM_{10} levels have remained fairly constant over this period with an average 10 percent decrease in levels over the last 5 years. The Erie air basin has demonstrated the most improvement with a 28 percent decrease over the last 5 years. Average PM_{10} levels have improved an average 14 percent since 1989, when monitoring became established in all areas of the Commonwealth. The solid line represents the annual air quality standard of 50 micrograms per cubic meter ($\mu g/m^3$).

The 1998 PM_{10} data summary for data units corrected to local conditions appear in Appendix A, Table A-8a. The 1998 PM_{10} data summary for data units corrected to standard conditions appear in Appendix A, Table A-8b. The tables contain the arithmetic annual mean (formed from the average of the quarterly means), the number of 24-hour samples collected (or calculated), the four maximum 24-hour values, the number of values greater than 150 $\mu g/m^3$, the minimum 24-hour value and the number of 24-hour values in the specified ranges. There were no sites in the Commonwealth that violated the annual or 24-hour ambient air quality PM_{10} standard in 1998.

Historical trend data for each site that monitored in 1998 is shown in Appendix A, Table A-9. This table lists the annual arithmetic means and second maximum 24-hour mean over the last ten years for each site that monitored in 1998 with at least 50 percent data completeness.

Figure 2-8 PM-10 Particulate Matter Concentrations 1998

Annual Means (Average by County)
(micrograms per cubic meter)

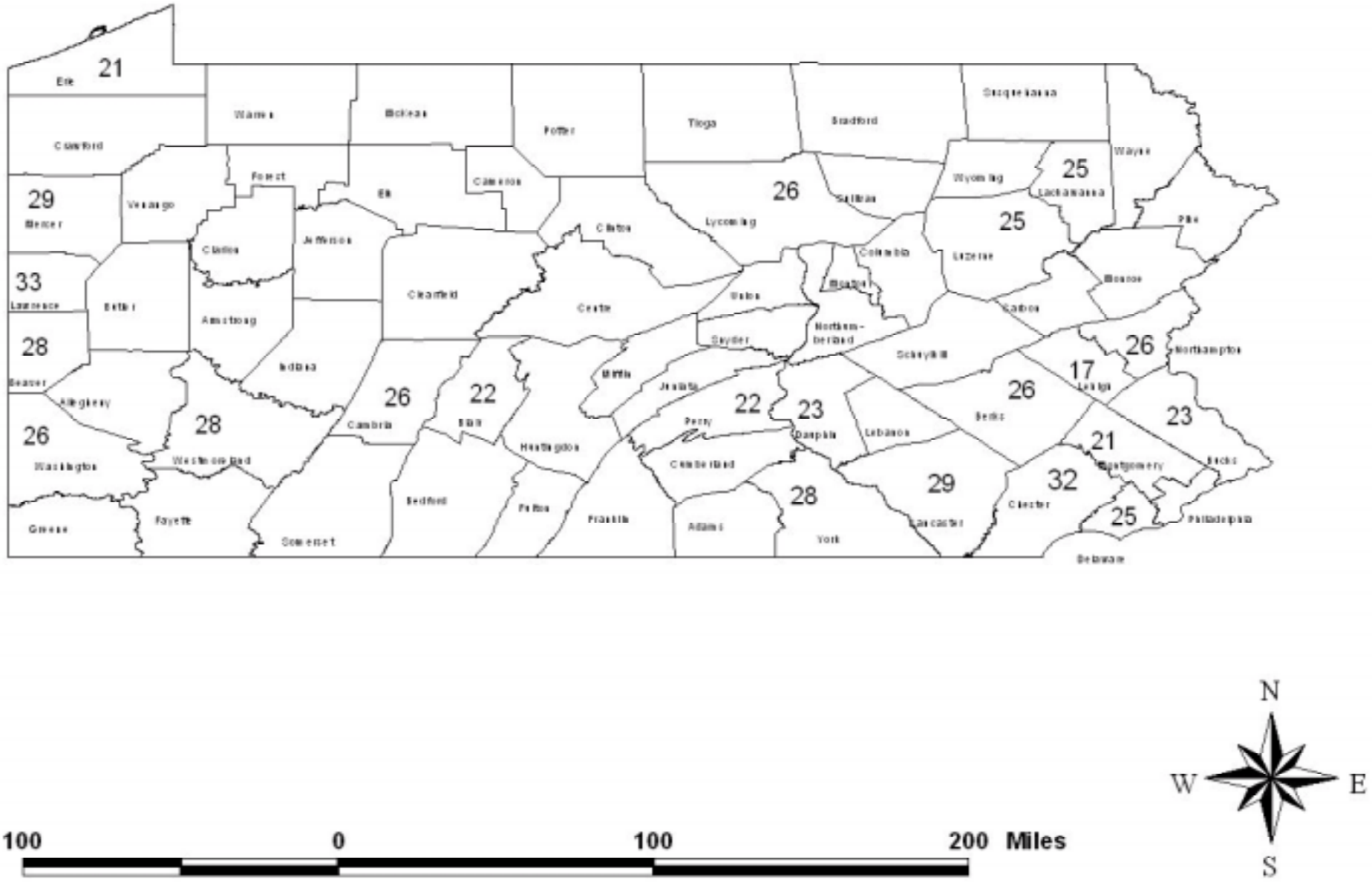


Figure 2-9 PM-10 Particulate Matter Concentrations 1998

Highest Second Maximum 24-Hour PM-10 (by county)
(micrograms per cubic meter)

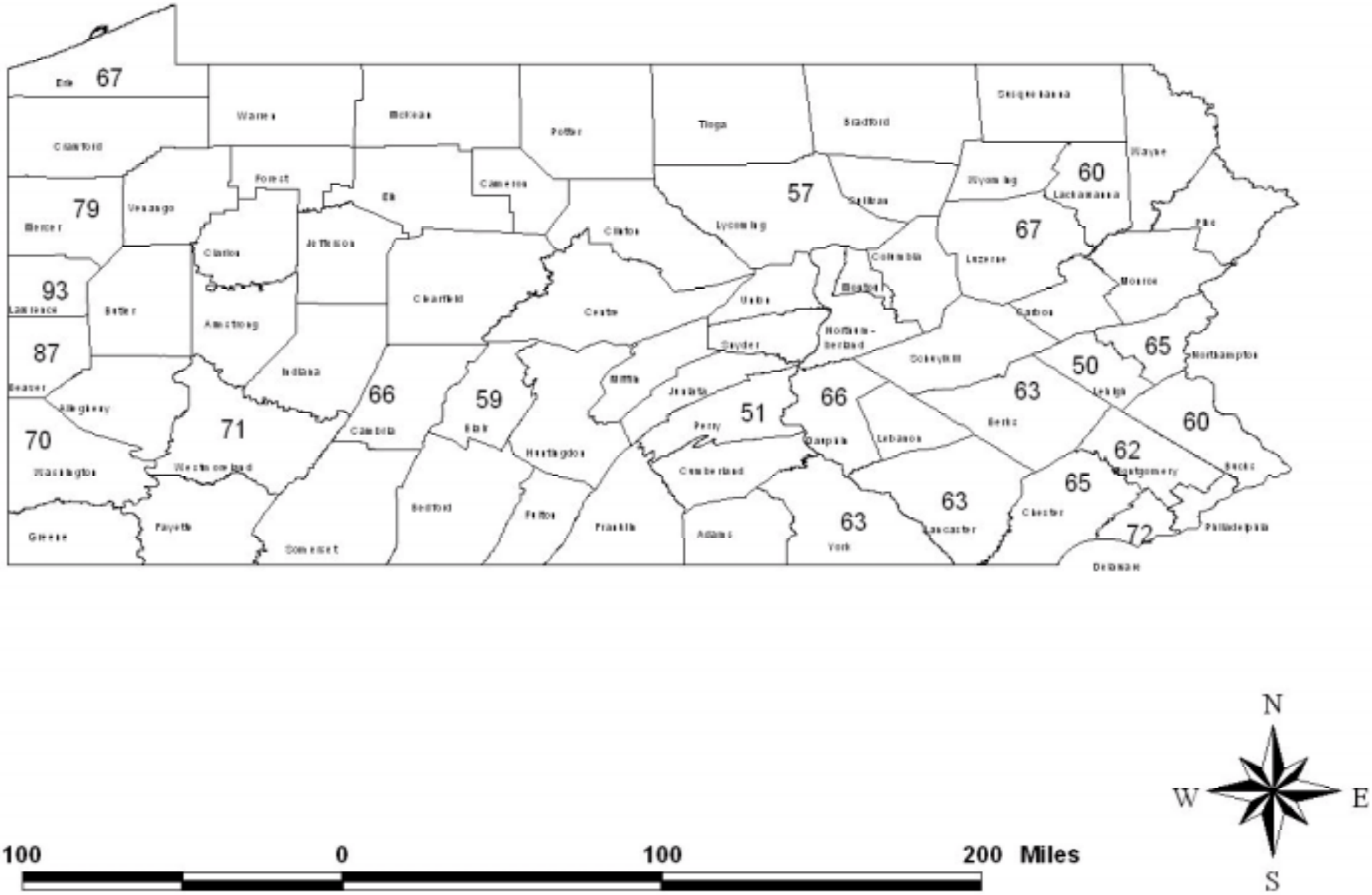
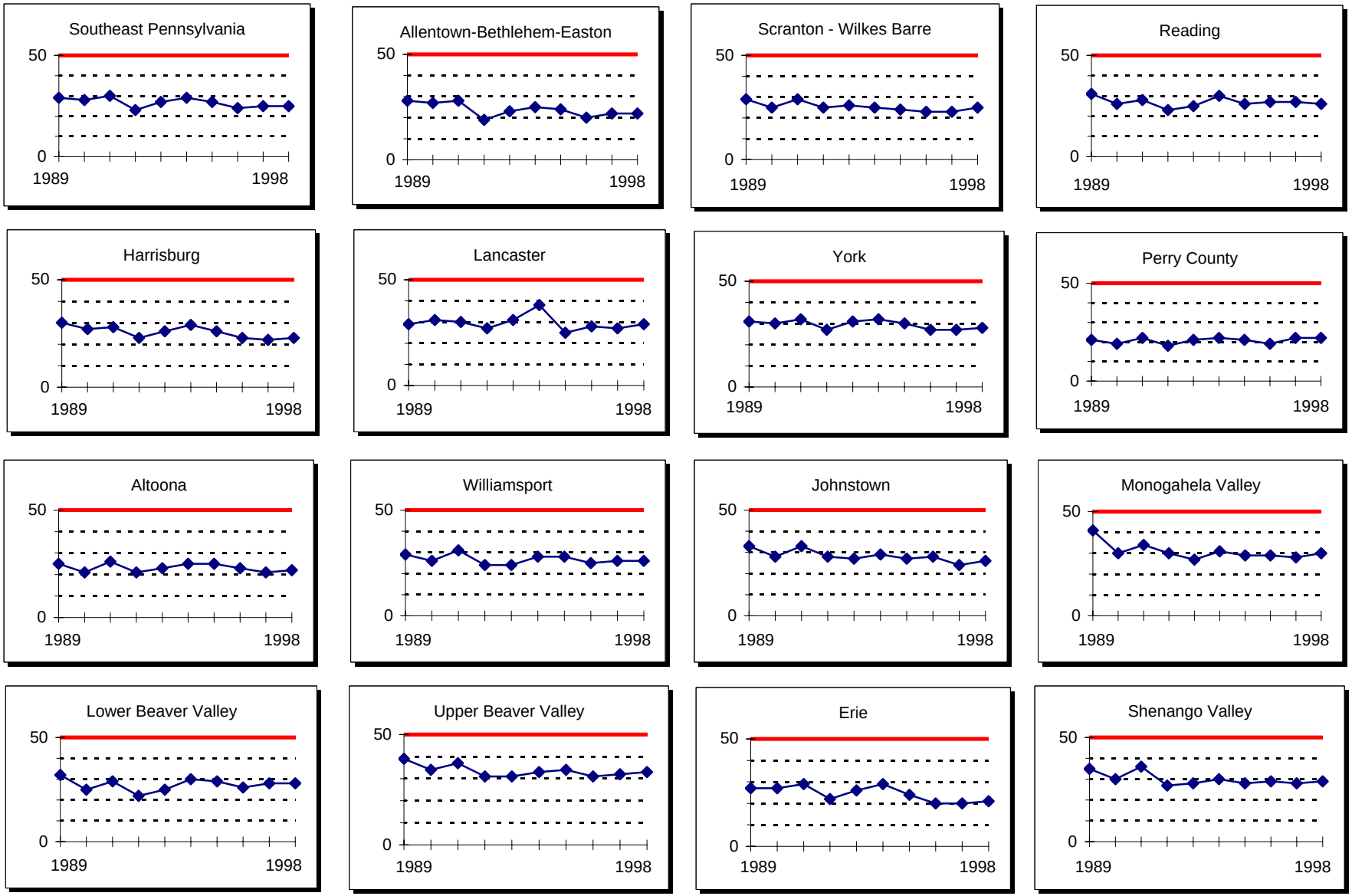


FIGURE 2-10. PM-10 PARTICULATE TRENDS IN PENNSYLVANIA 1989 to 1998
ANNUAL ARITHMETIC MEANS (micrograms per cubic meter)



SULFUR DIOXIDE

Sulfur dioxide is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning coal or oil containing sulfur. The major health effects associated with high exposures to sulfur dioxide include effects on breathing and respiratory illness symptoms. The population most sensitive to sulfur dioxide includes asthmatics and individuals with chronic lung disease or cardiovascular disease. Sulfur dioxide damages trees, plants and agricultural crops and acts as a precursor to acid rain.

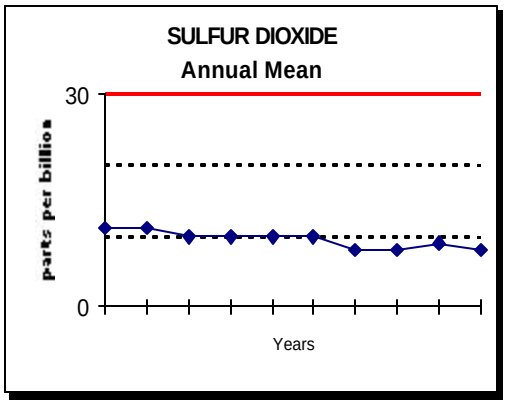


Figure 2-11. Trend in annual mean SO_2 concentrations, 1989-98

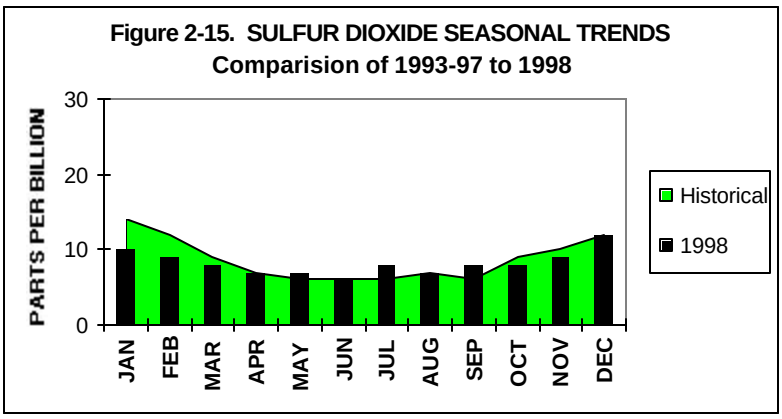
The statewide composite average of sulfur dioxide annual mean concentration for the years 1989 to 1998 is shown in Figure 2-11. Sulfur dioxide levels have shown only a slight improvement over the last ten years.

The map in Figure 2-12 displays the average sulfur dioxide annual mean by county in 1998. When there are multiple sites in the county the annual mean is an average of the sites. All counties in which monitoring was conducted met the air quality standard of 30 parts per billion (ppb).

The map in Figure 2-13 displays the highest second maximum 24-hour (daily) average concentration by county in 1998. All areas of the Commonwealth met the 24-hour air quality standard of 140 ppb.

Figure 2-14 shows the sulfur dioxide 10-year trend (1989 to 1998) of the annual arithmetic mean in the 12 air basins and the Altoona, Williamsport and Shenango Valley non-air basins. The solid line represents the annual air quality standard of 0.030 parts per million (ppm). The 1998 averages continue to be below 50 percent of the ambient air quality standard. The Johnstown air basin continues to improve with levels 50 percent less than recorded in 1989. All other areas have shown little improvement over the last 10 years.

Sulfur dioxide levels correlate significantly with ambient temperatures. As temperatures go down, the space heating requirements increase resulting in additional burning of coal and oil. The seasonal trend for sulfur dioxide is shown in Figure 2-15 for 1998 and the average levels for the preceding five years.



Sulfur dioxide data for all sites that operated in 1998 is summarized in Appendix A, Table A-10. The summary includes the annual arithmetic mean, the percentage of valid 1-hour data collected, the number of 3-hour and 24-hour air quality standard exceedances, the two maximum 3-hour (block averaging) and 24-hour (daily) means with dates of occurrence and the number of 24-hour averages in the indicated ranges. All sites in the Commonwealth met the annual mean, 3-hour and 24-hour ambient air quality standards.

Sulfur dioxide historical data over the last ten years is presented in Appendix A, Table A-11 for all stations that operated in 1998 with at least 50 percent valid data. This data was used to produce the trend chart shown in Figure 2-14. The data includes the annual arithmetic mean, the second maximum 24-hour and 3-hour averages.

Figure 2-12 Sulfur Dioxide Concentrations 1998

Annual Means (Average by County)
(parts per billion)

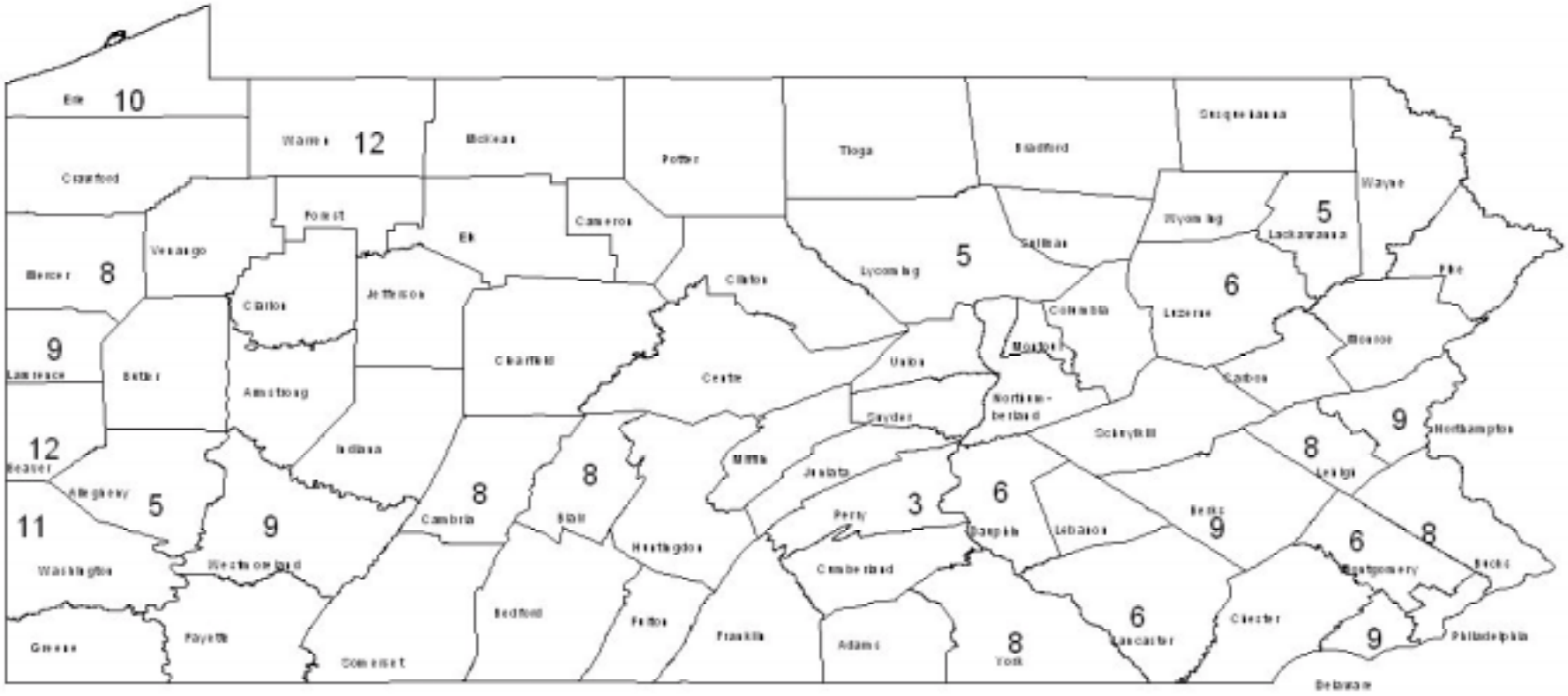
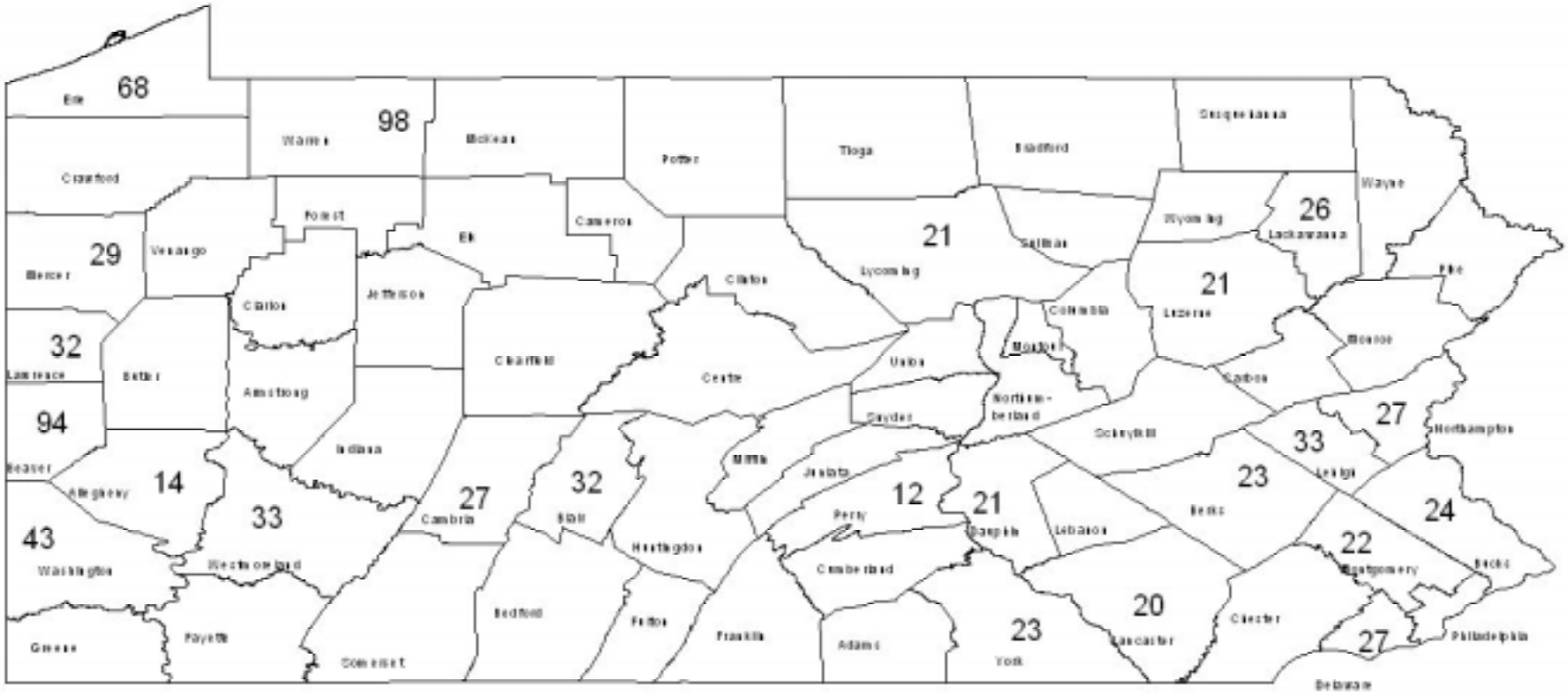


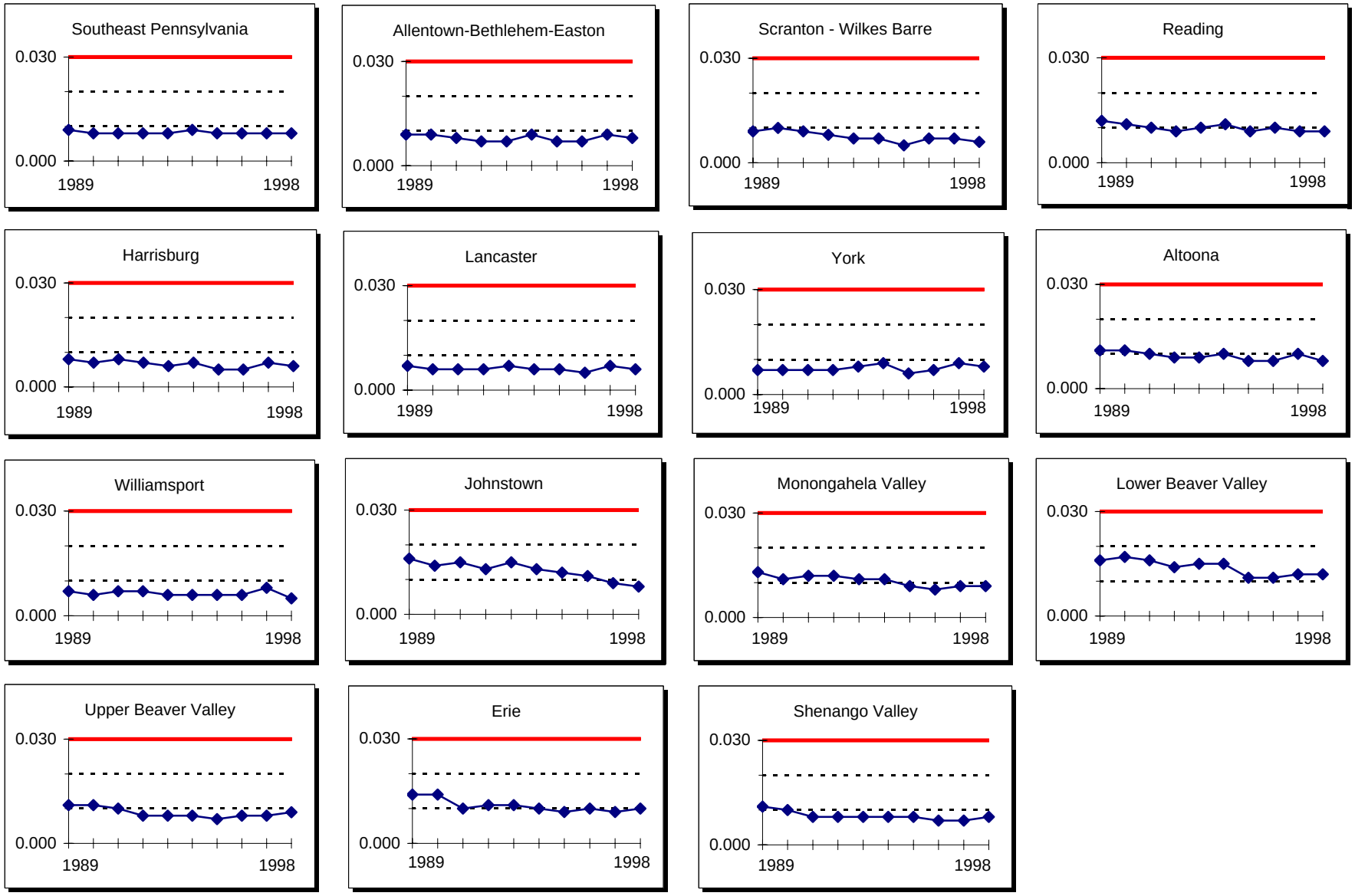
Figure 2-13 Sulfur Dioxide Concentrations 1998

Highest Second Maximum 24-Hour Running Mean (by county)
(parts per billion)



100 0 100 200 Miles

FIGURE 2-14. SULFUR DIOXIDE TRENDS IN PENNSYLVANIA 1989 to 1998
ANNUAL ARITHMETIC MEANS (PARTS PER MILLION)



OZONE

Ozone, or photochemical smog, is a secondary pollutant in that it is not emitted directly to the atmosphere but rather formed in the atmosphere by the reactions of other pollutants. Ground level ozone is formed during the summer months, when nitrogen oxides (NO_x) and volatile organic compounds (VOC) combine and react in the presence of sunlight and warm temperatures. Nitrogen oxides come from burning fossil fuels at power plants, industrial boilers and motor vehicles. They combine with volatile organic compounds like evaporated gasoline and dry cleaning solvents to create ozone. Ozone is a strong irritant to the eyes and upper respiratory system. It hampers breathing and also damages crops and materials.

In July 1997, EPA replaced the previous 1-hour primary standard (health-based) with a new 8-hour standard to protect against longer exposure periods. The secondary standard (welfare-based) was set identical to the 8-hour primary standard. The ozone secondary standard highlights the concerns associated with effects on vegetation. As a way of focusing on ozone-related vegetation effects, DEP has contracted with Pennsylvania State University to monitor at three rural sites: Moshannon State Forest, Clearfield County; Tiadaghton, Lycoming County; and at the Department of Conservation and Natural Resource Penn Nursery facility, Centre County.

In addition to the established surveillance monitoring sites, DEP also agreed to continue monitoring begun by the North American Research Strategy for Tropospheric Ozone (NARSTO). These sites are primarily designed to study ozone transport in the northeast. These sites are located in Holbrook, Greene County and Kunkletown, Monroe County.

Since the 1-hour ozone standard is still applicable in areas which have not attained compliance with the 1-hour standard, both 1- and 8-hour ozone data will be presented. The ozone season in Pennsylvania is defined to be from April 1 to October 31.

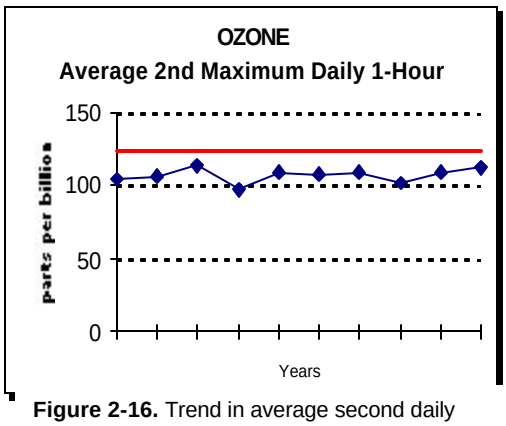


Figure 2-16. Trend in average second daily maximum 1-hour ozone concentrations, 1989-1998.

Ambient ground level ozone trends are erratic by nature. Changes in meteorological conditions, population growth, and changes in emissions (VOC and NOx) influence ozone concentrations. Figure 2-16 shows that the statewide (DEP sites only) average second daily maximum 1-hour ozone concentration is 7 percent higher than the 1989 level. However, ozone levels have shown no improvement since 1989. The solid line is at the primary 1-hour air quality standard of 125 parts per billion (ppb).

The map in Figure 2-17 presents the highest second daily maximum 1-hour ozone concentration by county in 1998. Montgomery, Delaware and Washington counties had more than one exceedance of the 1-hour air quality standard in 1998. All ozone monitoring sites are included in the representation with the exception of those monitors operated by Allegheny and Philadelphia counties.

The map in Figure 2-18 presents the fourth highest daily maximum running 8-hour ozone concentration by county in 1998. All ozone monitoring sites are included in the representation with the exception of those monitors operated by Allegheny and Philadelphia counties.

For the 12 airs basins and the Altoona, Williamsport and Shenango Valley non-air basins, Figure 2-19 shows the 10-year trend (1989 to 1998) of the average second daily maximum 1-hour ozone concentration, during the ozone season for DEP monitoring sites. Figure 2-20 shows the 10-year trend (1989 to 1998) of the 3-year average of the fourth highest daily 8-hour running ozone mean. All sites, with the exception of Williamsport, have been close or exceeded the 8-hour standard of 85 parts per billion (ppb). The solid line is both figures indicated the 1- or 8-hour standard level.

Williamsport has been the only area consistently below the air quality standards. Southeast Pennsylvania and Lancaster are the only DEP monitoring areas that are exceeding the 1-hour air quality standard. Sites operated by Allegheny and Philadelphia counties are also exceeding the air quality standard.

Ozone levels correlate significantly with ambient temperatures and the longer days present during the summer months. The seasonal trend for ozone is shown in Figure 2-21 for 1998 and the average levels for the preceding five years. Ozone levels during August and September 1998 were usually high when compared to the last 5 years.

Figure 2-21. OZONE SEASONAL TRENDS
Comparison of 1993-97 to 1998

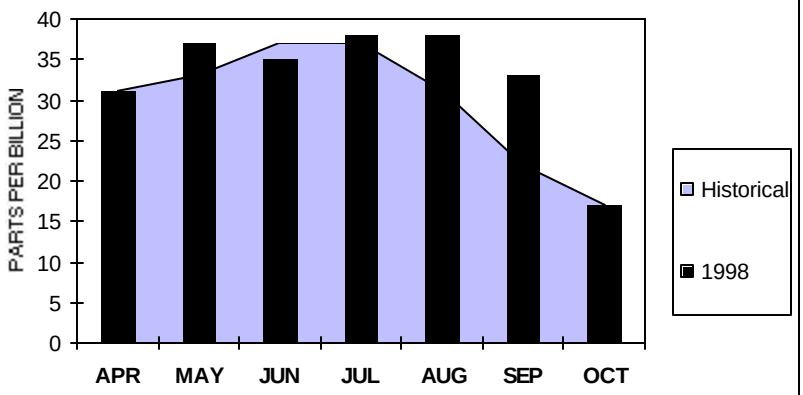


Table A-12a in Appendix A summarizes 1-hour ozone data during the ozone season of 1998 for all monitoring sites. The data includes the annual mean, the percentage of 1-hour valid data values collected during the ozone season, the four highest daily 1-hour maximum values with dates of occurrence, the number of days exceeding the 125 ppb daily air quality standard and the number of daily 1-hour maximum values in the indicated ranges.

Table A-12b in Appendix A summarizes 8-hour ozone data during the ozone season of 1998 for all monitoring sites. The data includes the number of valid days during the ozone season, and the four highest daily 8-hour maximum values with dates of occurrence.

Historical 1-hour data for ozone from 1989 to 1998 is contained in Appendix A, Table A-13 for all DEP sites that operated during the ozone season in 1998 with at least 50 percent valid data. The data includes the second maximum daily 1-hour value, which is on a day different from the maximum daily 1-hour value, and the number of exceedances of the air quality standard for the year. To attain compliance with the air quality standard, a site can have no more than three exceedances of the 0.12 parts per million (ppm) standard over the last three years. DEP monitoring sites located in the Southeast Pennsylvania and Lancaster air basins have more than three exceedances in the last three years along with sites operated by Allegheny and Philadelphia counties.

Table 2-1 lists the days on which the 1-hour ozone NAAQS was exceeded in 1998. This list includes monitoring sites operated by the Allegheny County Health Department and Philadelphia Air Management Services.

Table 2-1. Ozone Exceedance Days in Pennsylvania – 1998

Date of Occurrence	Monitoring Site	County	Daily 1-Hour Concentration (ppb)
5/15/1998	South Fayette	Allegheny	125
6/21/1998	Chester	Delaware	132
6/25/1998	Norristown	Montgomery	126
7/3/1998	Johnstown	Cambria	131
8/4/1998	Farrell	Mercer	129
8/6/1998	Charleroi	Washington	126
8/7/1998	Charleroi	Washington	130
8/22/1998	Norristown Chester	Montgomery Delaware	129 125
9/12/1998	Charleroi	Washington	127
9/14/1998	Erie	Erie	127

Figure 2-17 Ozone Concentrations 1998

Highest Second Maximum Daily 1-Hour Concentration (by county)
(parts per billion)

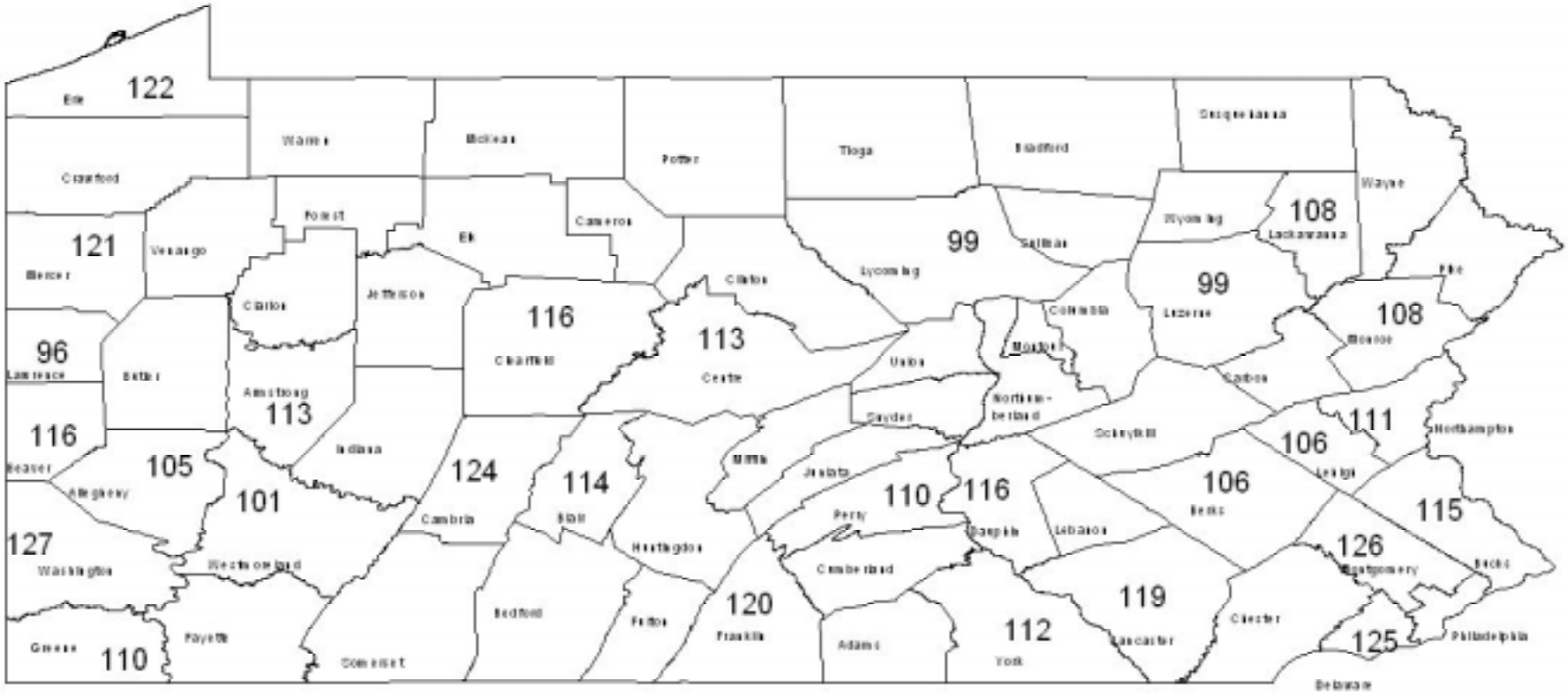
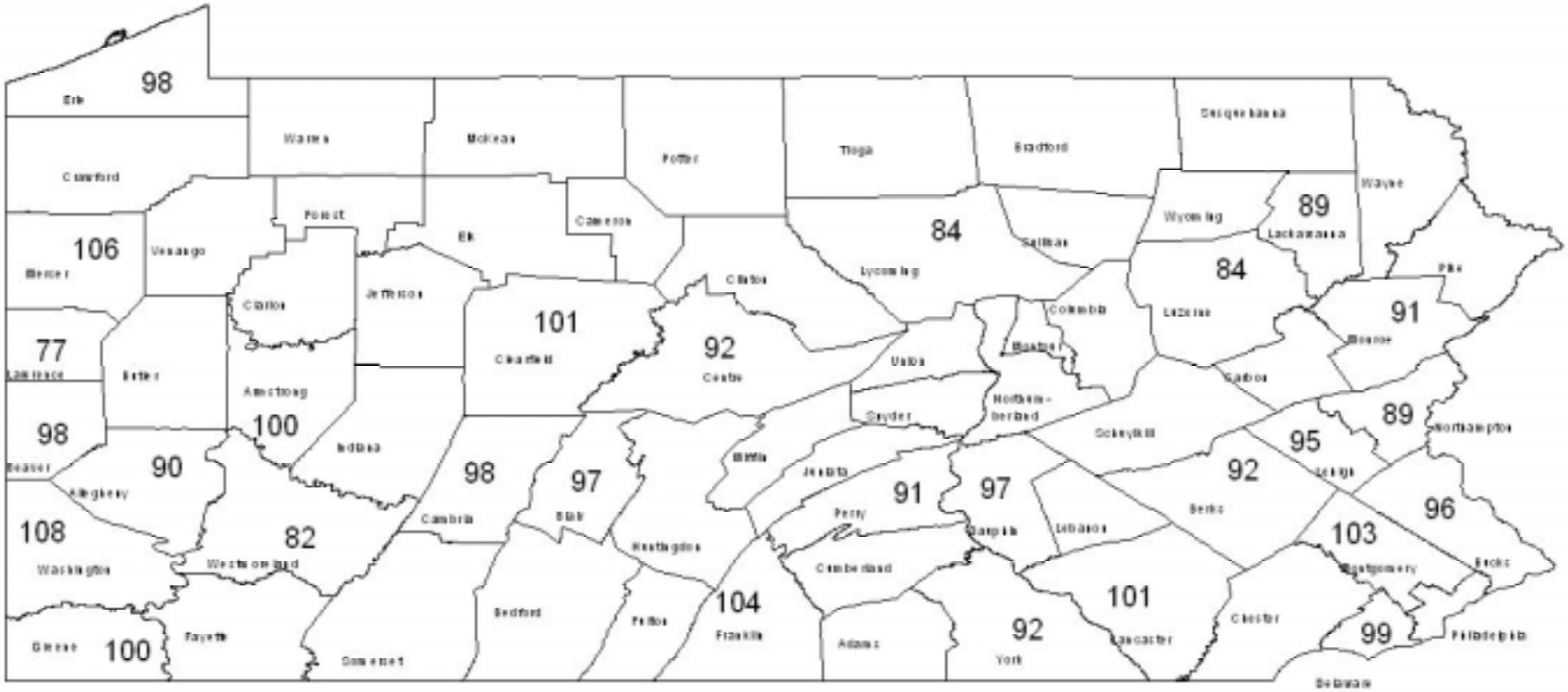


Figure 2-18 Ozone Concentrations 1998

Fourth Maximum Daily 8-Hour Concentration (by county)
(parts per billion)



N
W E
S

100 0 100 200 Miles

FIGURE 2-19. OZONE TRENDS IN PENNSYLVANIA 1989 to 1998
SECOND DAILY MAXIMUM 1-HOUR (PARTS PER BILLION)

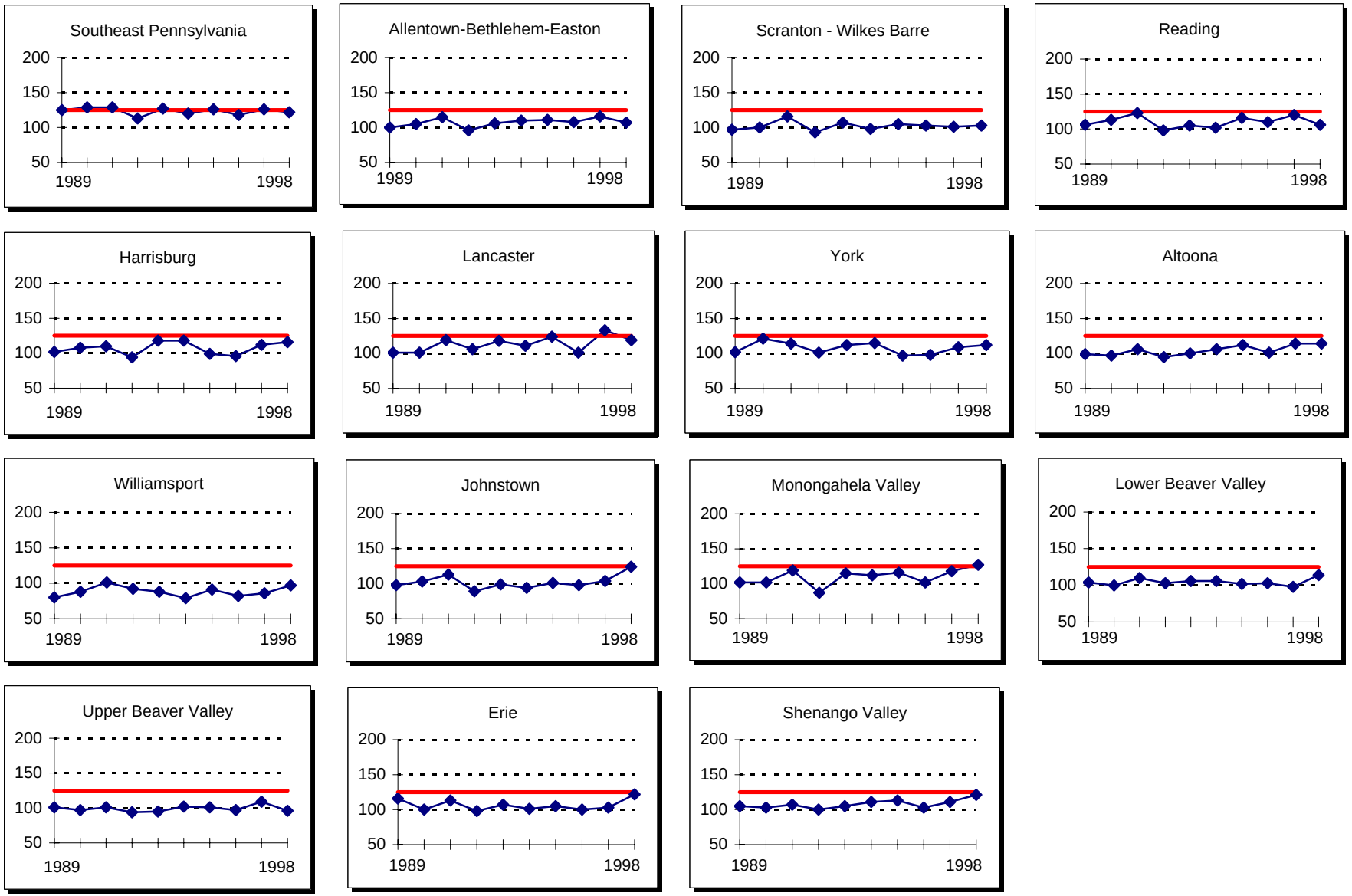
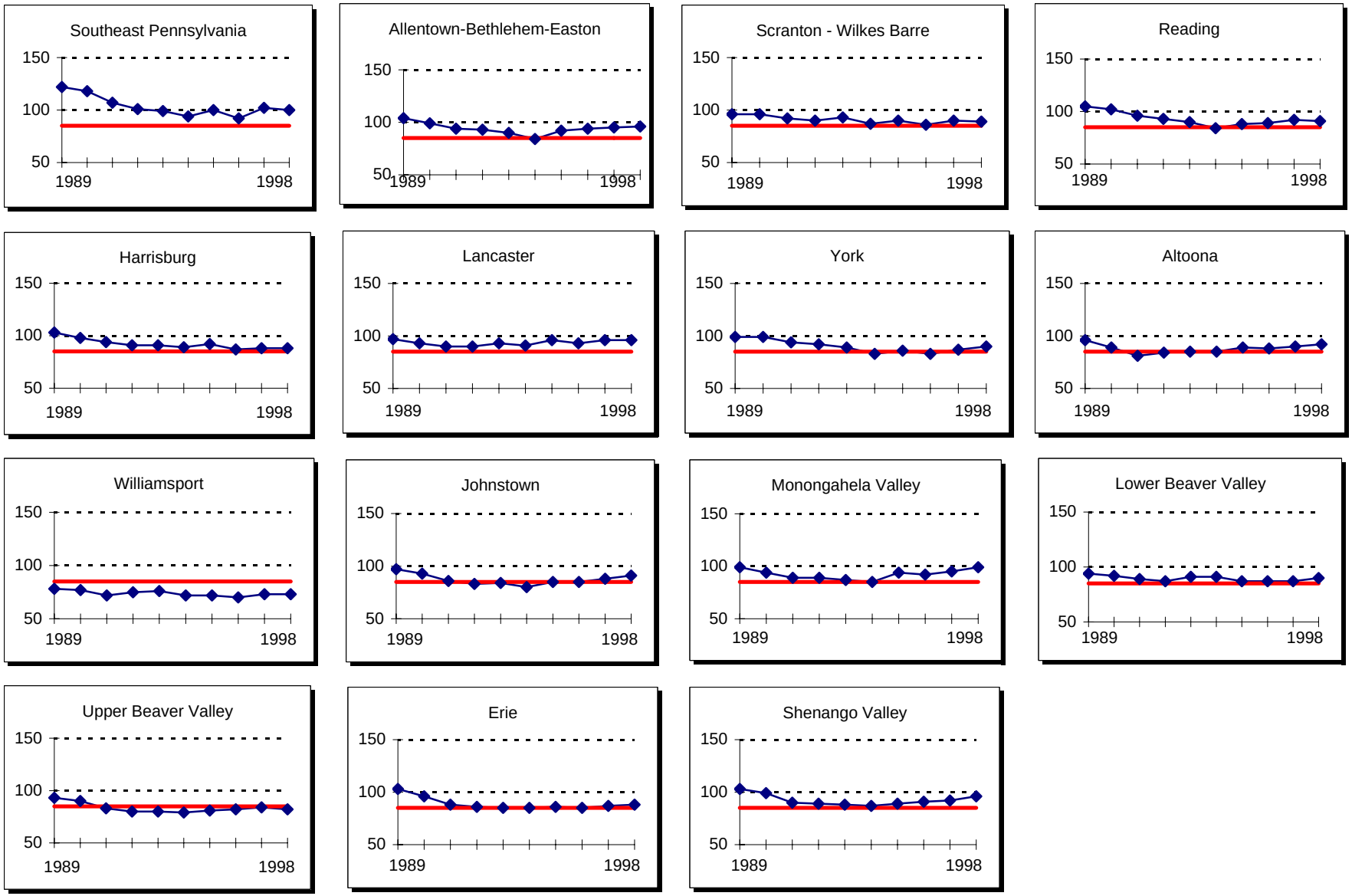


FIGURE 2-20. OZONE TRENDS IN PENNSYLVANIA 1989 to 1998
3-YEAR AVERAGE OF 4th DAILY MAXIMUM 8-HOUR MEAN (PARTS PER BILLION)



NITROGEN DIOXIDE / OXIDES OF NITROGEN

Nitrogen dioxide (NO_2) is a highly toxic reddish brown gas that is emitted primarily from the combustion of fuels in stationary or transportation sources. It can cause an odorous brown haze that irritates the eyes and nose, shuts out sunlight and reduces visibility. NO_2 acts as a precursor to acidic precipitation and plays a key role in nitrogen loading of forests and ecosystems. Also, NO_2 plays an important role in the atmospheric reactions that generate ozone. NO_2 has been associated with acute effects in sufferers of respiratory disease.

Oxides of nitrogen (NO_x) are a class of pollutants formed when fuel is burned at a very high temperature (above 1200° F), such as automobiles and power plants. For air pollution purposes it is composed primarily of nitric oxide (NO) and nitrogen dioxide (NO_2). Although there is no air quality standard for NO_x, it is an important precursor to both ozone and acid rain.

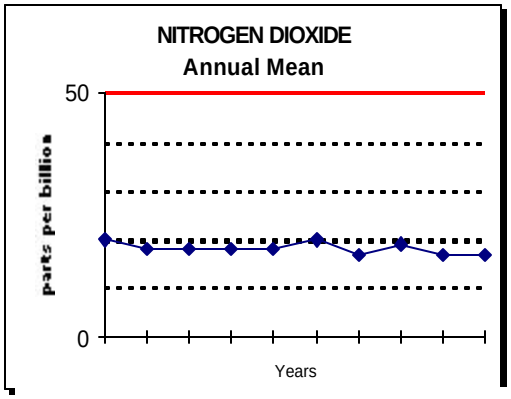


Figure 2-22. Trend in annual NO_2 concentrations, 1989-1998.

The trend in annual mean nitrogen dioxide (NO_2) concentrations statewide between 1989 and 1998 is shown in Figure 2-22. The trend shows a 15 percent decrease in the composite statewide mean over the last 10 years. All areas of the state continue to be well below the air quality annual standard of 53 parts per billion (ppb), which is indicated, by the solid line in Figure 2-22.

Figure 2-23 indicates the 10-year trend of nitrogen dioxide annual mean levels from 1989 to 1998 in 12 air basins and the Altoona non-air basin. Nitrogen dioxide levels have remained relatively constant over the last 10 years. The solid line represents the air quality standard for an annual mean of 0.053 parts per million (ppm). All areas are at or below 50 percent of the annual air quality standard.

Nitrogen dioxide levels correlate significantly with ambient temperature levels, although not as high a statistical significance as does ozone and sulfur dioxide. The seasonal trend for nitrogen dioxide is shown in Figure 2-24 for 1998 and for the average of the preceding five years.

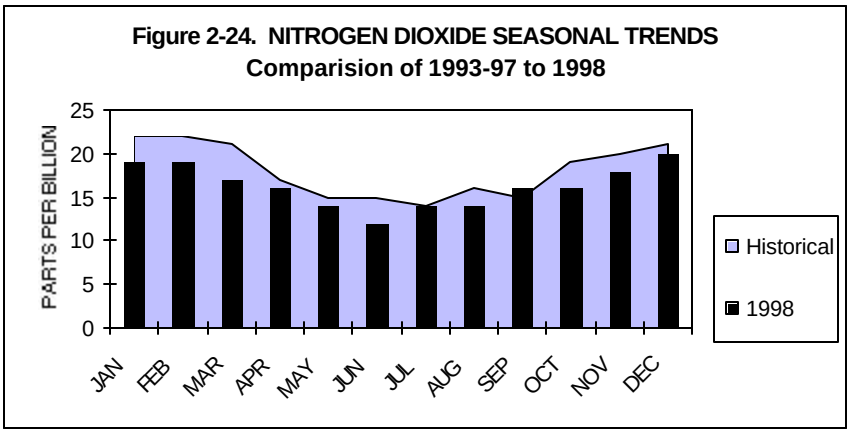


Table A-14 in Appendix A summarizes nitrogen dioxide data for 1998. The table contains the annual arithmetic mean, the percent of valid 1-hour data values collected over the calendar year, the two maximum 1-hour and 24-hour daily means with dates of occurrence and the number of 1-hour values in the indicated ranges. No site exceeded the annual primary air quality standard for nitrogen dioxide in Pennsylvania in 1998.

Historical trend data for those sites which monitored nitrogen dioxide in 1998 is presented in Appendix A, Table A-15 for the years 1989 to 1998. Data is shown for those sites with at least 50

percent valid data. The annual arithmetic mean is shown so that comparison to the air quality standard can be made for the individual sites.

Table A-16 in Appendix A summarizes data for oxides of nitrogen in 1998. This table includes the annual arithmetic mean, the percent of valid data collected during the year, the two maximum 1-hour and 24-hour daily means with dates of occurrence, and the number of 1-hour values in the indicated ranges.

Figure 2-25 represents the statewide trend of oxides of nitrogen by using the arithmetic mean from all monitoring sites over the last ten years with at least 50 percent data capture.

Figure 2-25. Oxides of Nitrogen Annual Means

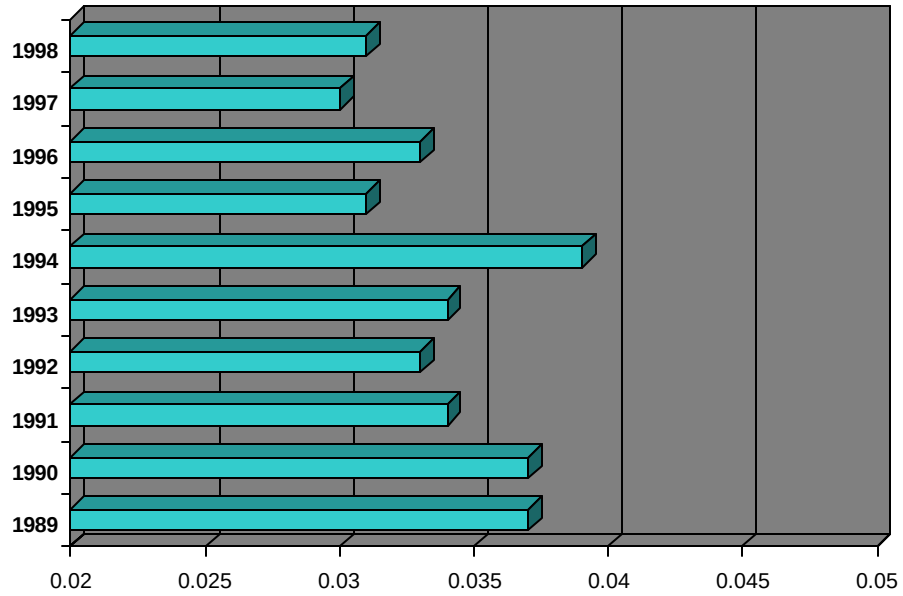
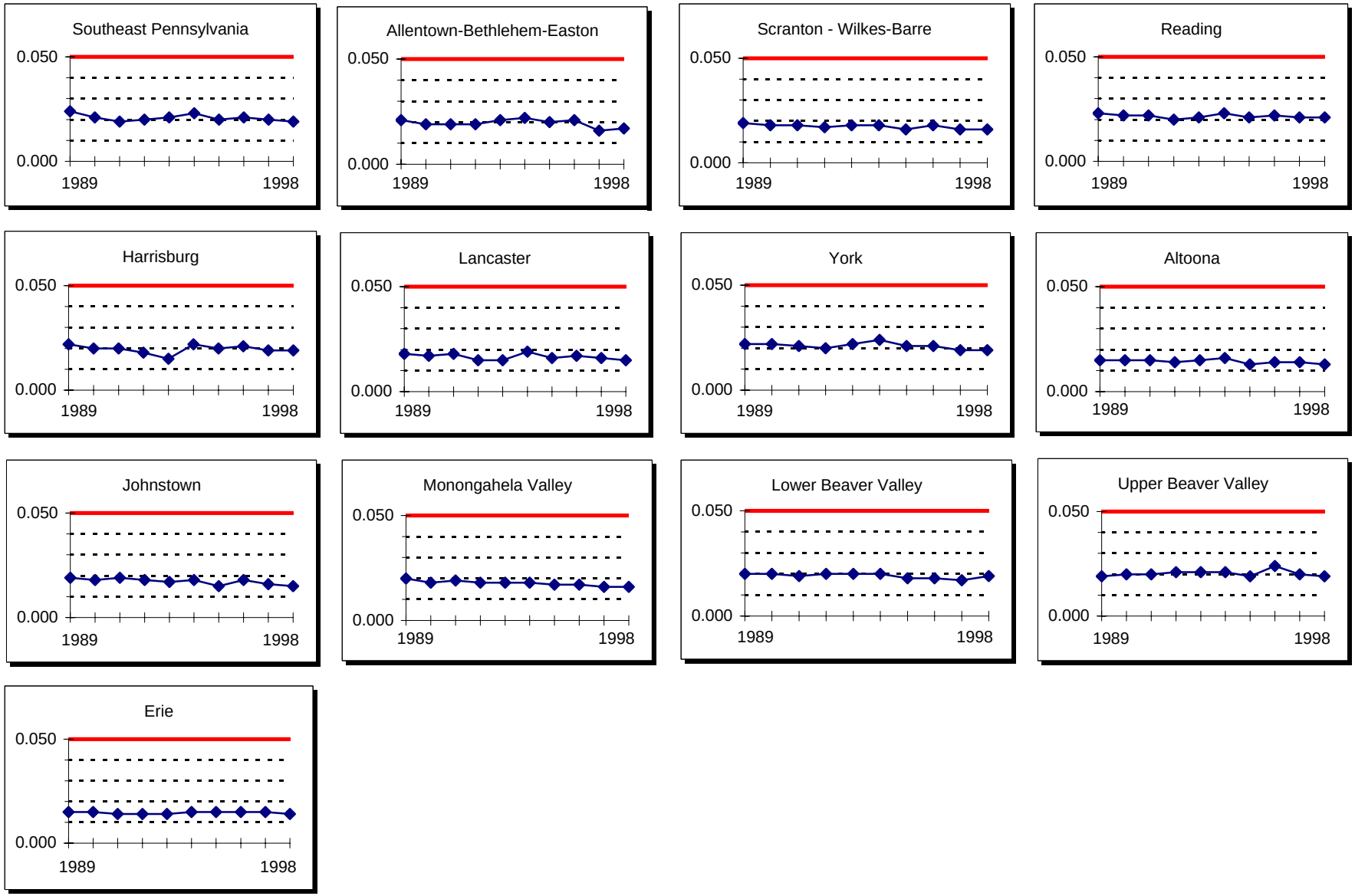


FIGURE 2-23. NITROGEN DIOXIDE TRENDS IN PENNSYLVANIA 1989 to 1998
ANNUAL ARITHMETIC MEANS (PARTS PER MILLION)



CARBON MONOXIDE

Carbon monoxide (CO) is a colorless, odorless poisonous gas that has an affinity for hemoglobin, 210 times that of oxygen. By combining with the hemoglobin in the blood, it inhibits the delivery of oxygen to the body's tissue, thereby causing asphyxia or shortness of breath. The health threat from carbon monoxide is most serious for those who suffer from cardiovascular disease. At higher levels of exposure, healthy individuals are also affected.

Carbon monoxide is a by-product of the incomplete burning of fuels. Industrial processes contribute to carbon monoxide pollution levels, but the principal source of carbon monoxide in most large urban areas is vehicular emissions.

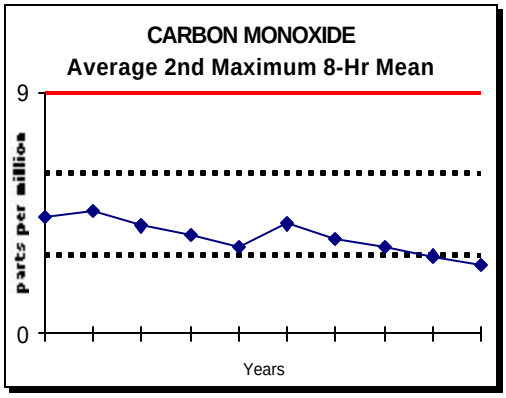


Figure 2-26. Trend in second maximum 8-hour average CO concentrations, 1989-1998

The downward trend in carbon monoxide levels continues between 1989 and 1998. Figure 2-26 shows that statewide average second maximum 8-hour carbon monoxide concentrations decreased 40 percent over the 10-year period. The carbon monoxide improvement occurred across all monitoring environments – downtown central business district (CBD), rural and suburban (classified as other). As expected, Figure 2-27 shows that CBD sites recorded higher carbon monoxide concentrations on average, than other monitoring site locations. The solid line in Figures 2-26 and 2-27 indicate the 8-hour running mean air quality standard of 9 parts per million (ppm).

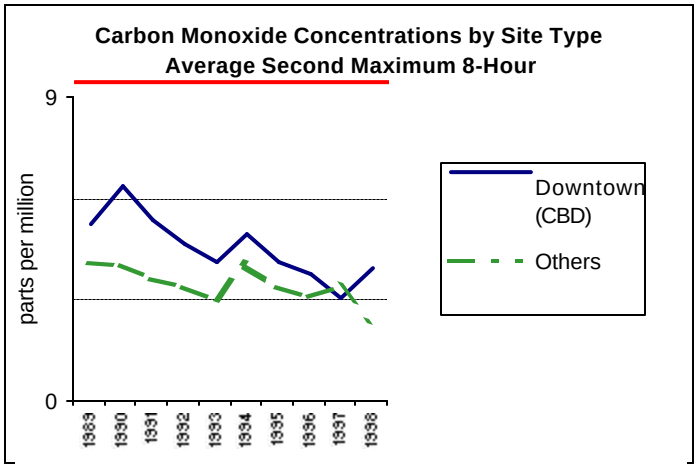


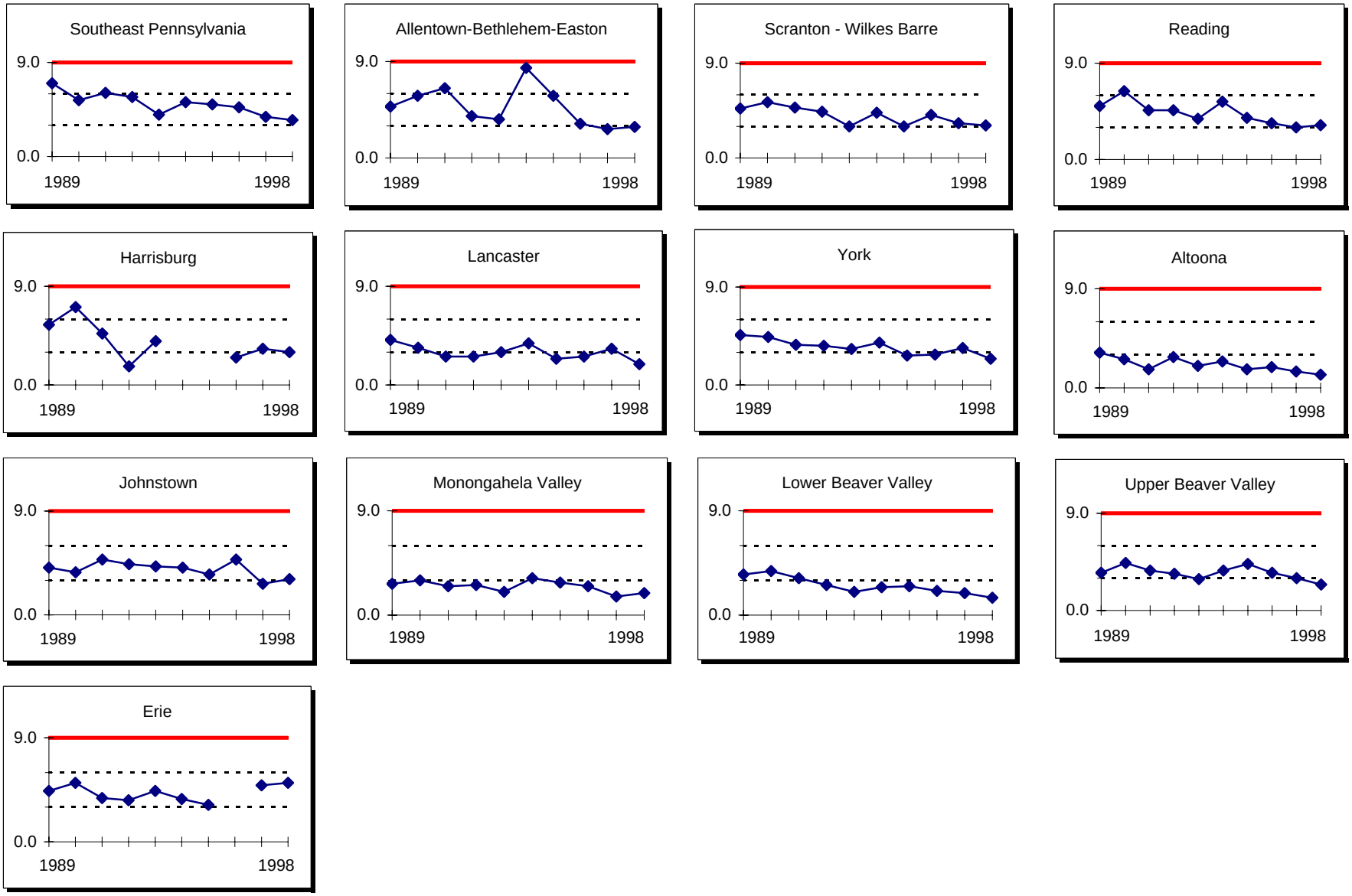
Figure 2-27. Trend in second maximum 8-hour average CO concentrations by location, 1989-1998

The carbon monoxide 10-year historical trend for different areas of the state are shown in Figure 2-28 for 1989 to 1998 using the highest second maximum 8-hour non-overlapping running average. The largest improvements were seen in the Southeast Pennsylvania air basin that experienced a 50 percent improvement and the Lancaster air basin which improved 54 percent over the last 10 years. The solid lines on the graphs represent the 8-hour ambient air quality standard.

Carbon monoxide data for 1998 has been summarized in Appendix A, Table A-17. This table includes the annual arithmetic mean, the percent of valid 1-hour data collected, the two maximum 1-hour means and 8-hour non-overlapping running means with dates of occurrence, the number of 1-hour and 8-hour air quality standard exceedances and the number of 8-hour running means in the indicated ranges. There were no exceedances of the 1- or 8-hour air quality standard observed in 1998.

Historical trend data for carbon monoxide is shown in Appendix A, Table A-18, for the years 1989 to 1998 for all air monitoring sites that operated in 1998 with at least 50 percent valid data. The data in the table includes the second maximum 1-hour average and the second maximum 8-hour non-overlapping running average. The second maximum value is presented to indicate whether the site is attaining the air quality standard. The 1994 levels were abnormally elevated due to two significant air stagnation events that occurred during morning rush hours which trapped vehicular emissions.

FIGURE 2-28. CARBON MONOXIDE TRENDS IN PENNSYLVANIA 1989 to 1998
SECOND MAXIMUM 8-HOUR RUNNING MEAN (PARTS PER MILLION)



CHAPTER 3
POLLUTANT STANDARDS INDEX

A Pollutant Standards Index (PSI) is published daily for 17 areas in Pennsylvania. The Pollutant Standards Index incorporates recorded levels of five common air contaminants - carbon monoxide (CO), sulfur dioxide (SO_2), suspended particulate matter 10 microns or less in size (PM_{10}), ozone (O_3) and nitrogen dioxide (NO_2).

The PSI uses a segmented linear function to convert concentration levels of these pollutants into normalized numbers based on the National Ambient Air Quality Standards (NAAQS), the various episode levels and the significant harm levels for each pollutant. The actual breakpoints for the PSI values in terms of pollutant concentrations are shown in Table 3-1. The highest index number calculated from the five subindices is published along with the pollutant responsible and a descriptor term of good (0-50), moderate (51-100), unhealthful (101-199), very unhealthful (200-299) or hazardous (300-500).

The Commonwealth has now installed continuous PM_{10} monitors for suspended particulate matter at all of its PSI reporting sites.

Table 3-2 shows the number of days the index was reported in each descriptor category, as well as showing the number of times the pollutant (subindex) was worse than moderate. Table 3-3 shows the numbers and percentage of days that the PSI was based on a particular pollutant subindex. Ozone readings were used only during the ozone season of April 1 to October 31.

TABLE 3-1. BREAKPOINTS FOR THE POLLUTANT STANDARDS INDEX (PSI)

Breakpoints	PSI Value	PM_{10} ($\mu g/m^3$) 24-Hour	SO_2 (ppm) 24-Hour	CO (ppm) 8-Hour	Ozone (ppm) 1-Hour	NO_2 (ppm) 1-Hour
50% of Primary Short-Term NAAQS	50	50[a]	0.03[a]	4.5	0.06	---[b]
Primary Short-Term NAAQS	100	150	0.14	9.0	0.12	---[b]
Alert Level	200	350	0.30	15.0	0.20	0.6
Warning Level	300	420	0.60	30.0	0.40	1.2
Emergency Level	400	500	0.80	40.0	0.50	1.6
Significant Harm Level	500	600	1.00	50.0	0.60	2.0

[a] Annual primary NAAQS
[b] No index value reported at concentration levels below those specified by the Alert Level Criteria

TABLE 3-2. POLLUTANT STANDARDS INDEX SUMMARY BY CATEGORY

JANUARY 1998 to DECEMBER 1998

	NUMBER OF DAYS INDEX REPORTED IN CATEGORY					NO. DAYS	NUMBER OF DAYS SUBINDEX WORSE THAN MODERATE				
STATION	GOOD	MODERATE	UNHEALTHFUL	VERY UNHEALTHFUL	HAZARDOUS	INDEX REPORTED	PM-10	SULFUR DIOXIDE	OZONE	CARBON MONOXIDE	NITROGEN DIOXIDE
BRISTOL	274	91	0	0	0	365	0	0	0	0	0
CHESTER	252	109	2	0	0	363	0	0	2	0	0
NORRISTOWN	253	110	2	0	0	365	0	0	2	0	0
ALLENTOWN	268	97	0	0	0	365	0	0	0	0	0
FREEMANSBURG	269	96	0	0	0	365	0	0	0	0	0
SCRANTON	281	84	0	0	0	365	0	0	0	0	0
WILKES-BARRE	281	84	0	0	0	365	0	0	0	0	0
READING	266	99	0	0	0	365	0	0	0	0	0
HARRISBURG	255	110	0	0	0	365	0	0	0	0	0
LANCASTER	250	114	1	0	0	365	0	0	1	0	0
YORK	268	96	1	0	0	365	0	0	1	0	0
ALTOONA	260	105	0	0	0	365	0	0	0	0	0
JOHNSTOWN	263	100	2	0	0	365	0	0	2	0	0
CHARLEROI	213	141	8	0	0	362	0	0	8	0	0
BEAVER FALLS	263	101	1	0	0	365	0	0	1	0	0
NEW CASTLE	286	79	0	0	0	365	0	0	0	0	0
ERIE	262	101	2	0	0	365	0	0	2	0	0

Table 3-3. Pollutant Standards Index Summary by Pollutant

January 1998 to December 1998

NUMBER OF DAYS AND PERCENTAGE SUBINDEX WAS MAXIMUM

STATION	PM-10		SULFUR DIOXIDE		OZONE		CARBON MONOXIDE		NITROGEN DIOXIDE	
Bristol	41	(11.2)	77	(21.1)	203	(55.6)	44	(12.1)	0	(0.0)
Chester	48	(13.2)	110	(30.3)	205	(56.5)	0	(0.0)	0	(0.0)
Norristown	42	(11.5)	101	(27.7)	211	(57.8)	11	(3.0)	0	(0.0)
Allentown	3	(0.8)	126	(34.5)	206	(56.4)	30	(8.2)	0	(0.0)
Freemansburg	46	(12.6)	79	(21.9)	213	(58.4)	27	(7.4)	0	(0.0)
Scranton	45	(12.3)	95	(26.0)	213	(58.4)	12	(3.3)	0	(0.0)
Wilkes-Barre	41	(11.2)	91	(24.9)	209	(57.3)	24	(6.6)	0	(0.0)
Reading	27	(7.4)	121	(33.2)	205	(56.2)	12	(3.3)	0	(0.0)
Harrisburg	47	(12.9)	61	(16.7)	206	(56.4)	51	(14.0)	0	(0.0)
Lancaster	55	(15.1)	88	(24.1)	208	(57.0)	14	(3.8)	0	(0.0)
York	54	(14.8)	94	(25.8)	198	(54.2)	19	(5.2)	0	(0.0)
Altoona	44	(12.1)	102	(27.9)	207	(56.7)	12	(3.3)	0	(0.0)
Johnstown	38	(10.4)	106	(29.0)	205	(56.2)	16	(4.4)	0	(0.0)
Charleroi	43	(11.9)	103	(28.5)	211	(58.3)	5	(1.4)	0	(0.0)
Beaver Falls	46	(12.6)	109	(29.9)	199	(54.5)	11	(3.0)	0	(0.0)
New Castle	80	(21.9)	89	(24.4)	181	(49.6)	15	(4.1)	0	(0.0)
Erie	25	(6.8)	105	(28.8)	197	(54.0)	38	(10.4)	0	(0.0)

Numbers in () indicate percentage subindex was maximum

CHAPTER 4
PRECISION AND ACCURACY

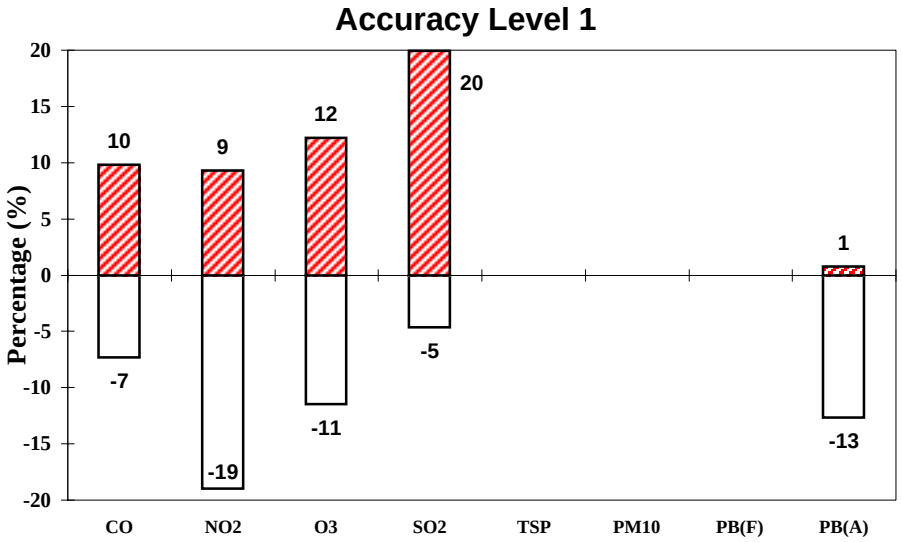
DEP conducts regularly scheduled performance audits and precision checks on all air monitoring equipment. Performance audits are conducted for the purpose of assessing data accuracy on carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), total suspended particulate (TSP), suspended particulate matter 10 microns or less in size (PM_{10}) and lead (Pb) monitoring equipment. Precision checks are performed biweekly on CO, SO_2, NO_2 and O_3 and every sampling day (once every sixth day) for selected TSP, PM_{10} and lead.

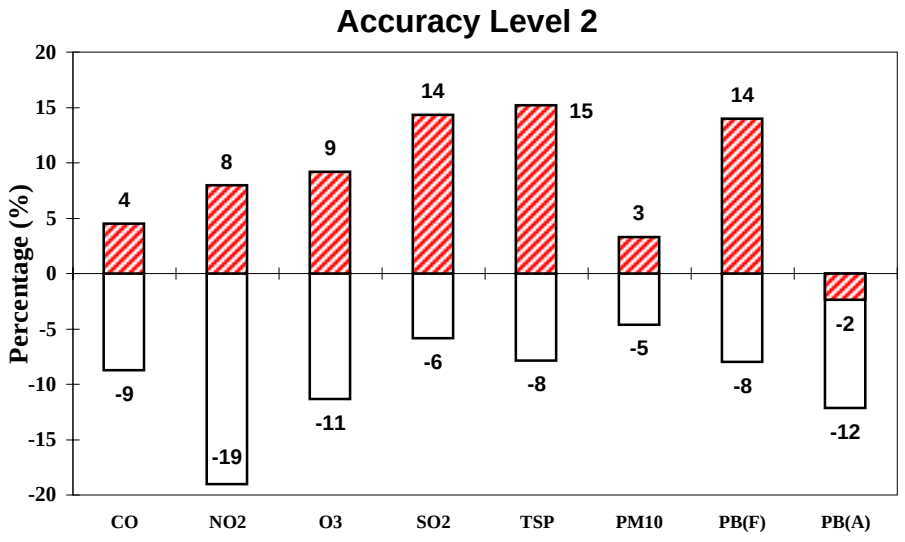
Data obtained from the performance audits and precision checks are converted to 95 percent upper and lower probability limits using standard statistical methods. For precision, only one probability level is calculated for each parameter. However, accuracy is determined at up to three points. Acceptable 95 percent probability limits for accuracy are $\pm$ 20 percent for continuous gaseous parameters and $\pm$ 15 percent for discrete particulate parameters (TSP, PM_{10} and lead). Acceptable 95 percent probability limits for precision are $\pm$ 15 percent for all parameters.

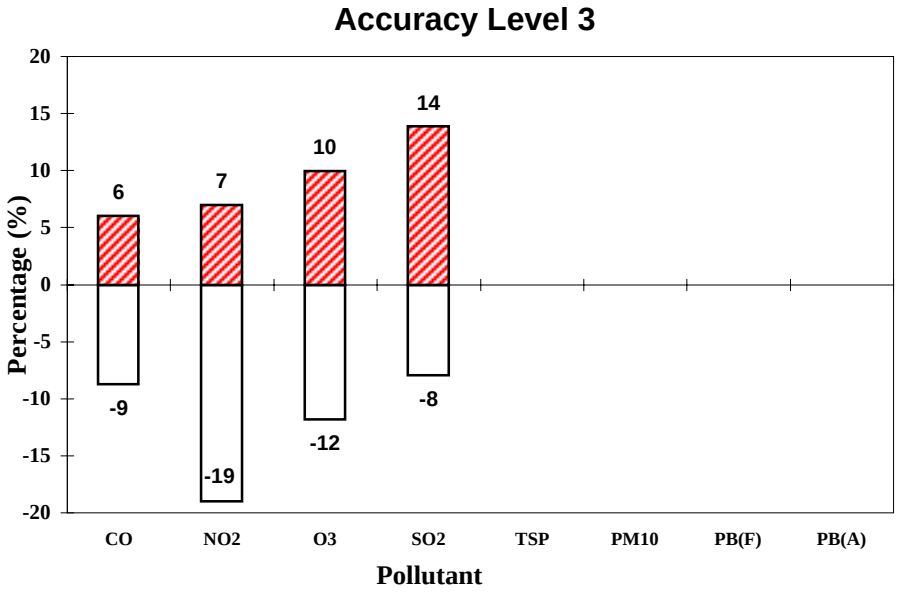
Figure 4-1 summarizes the 95 percent probability limits from all four quarterly reporting periods within the calendar year. The values presented were calculated from weighted arithmetic averages for each quarter's probability limits. Two different types of lead checks are performed; flow, which is indicated by PB(F) and analytical, which is indicated by PB(A) on the legends of each graph.

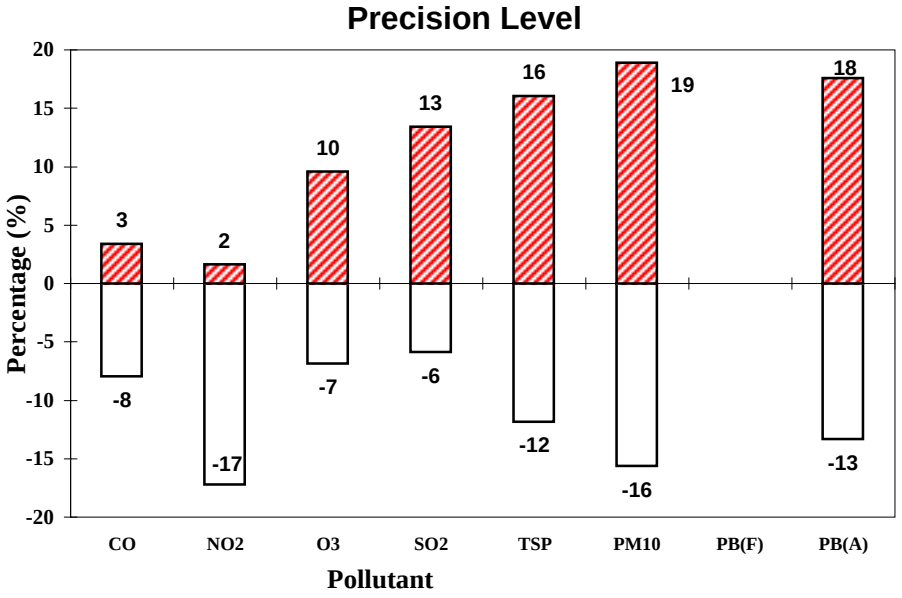
FIGURE 4-1 1998 ANNUAL ACCURACY AND PRECISION PROBABILITY LIMITS

95% LOWER/UPPER LIMITS









APPENDIX A

DATA TABLES

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

TOTAL SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Geometric Annual Mean	Geometric Standard Deviation	Arithmetic Annual Mean	Number Obs.	Daily Averages 1st Max 24HR Mean	1st Max Date MM/DD	2nd Max 24HR Mean	2nd Max Date MM/DD	3nd Max 24HR Mean	3nd Max Date MM/DD	Number Obs. >260	Number Obs. >150	Minimum 24 Hour Mean	Number of 24 Hour Values In Ranges 0 to 65	66 to 130	131 to 195	196 to 260	261 to 325	326 to 390	391 to 455	> 455
Southeast Pennsylvania Air Basin																						
Bristol	P01	33	1.58	37	53	92	12/01	69	05/29	66	03/30	0	0	13	50	3	0	0	0	0	0	0
Chester	P11	40	1.59	45	56	107	02/04	104	08/27	93	03/30	0	0	15	50	6	0	0	0	0	0	0
Conshohocken	P12	37	1.58	40	53	93	12/01	80	05/29	74	03/30	0	0	12	49	4	0	0	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																						
Nazareth	A24	23	1.71	26	17	62	03/30	42	04/17	40	01/05	0	0	9	17	0	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																						
Wilkes-Barre	S07	33	1.62	37	44	78	01/29	71	03/30	70	05/17	0	0	8	41	3	0	0	0	0	0	0
DEP Region 2 Non-Air Basin																						
Palmerton	205	29	1.63	33	60	68	05/17	66	02/10	65	09/14	0	0	8	58	2	0	0	0	0	0	0
Reading Air Basin																						
Laureldale	R10	51	1.73	59	59	168	03/30	156	02/10	130	11/19	0	2	13	39	18	2	0	0	0	0	0
Harrisburg Air Basin																						
Harrisburg	H06	38	1.66	41	49	80	06/22	75	02/10	72	05/29	0	0	9	45	4	0	0	0	0	0	0
Lemoyne	H15	33	1.76	39	60	90	09/14	84	06/22	70	07/16	0	0	9	53	7	0	0	0	0	0	0

**** No Long-Term or Short-Term Air Quality Standards *****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

TOTAL SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Geometric Annual Mean	Geometric Standard Deviation	Arithmetic Annual Mean	Number Obs.	Daily Averages 1st Max 24HR Mean	1st Max Date MM/DD	2nd Max 24HR Mean	2nd Max Date MM/DD	3nd Max 24HR Mean	3nd Max Date MM/DD	Number Obs. >260	Number Obs. >150	Minimum 24 Hour Mean	Number of 24 Hour Values In Ranges 0 to 65	66 to 130	131 to 195	196 to 260	261 to 325	326 to 390	391 to 455	> 455
Lancaster Air Basin																						
Lancaster	L04	45	1.68	50	57	93	10/26	90	02/10	90	10/20	0	0	5	45	12	0	0	0	0	0	0
Lancaster	L05	48	1.51	52	61	97	02/10	94	06/22	89	05/29	0	0	19	48	13	0	0	0	0	0	0
York Air Basin																						
York	Y02	37	1.59	40	55	72	01/05	69	06/22	68	02/10	0	0	9	50	5	0	0	0	0	0	0
DEP Region 3 Non-Air Basin																						
Lyons	301	30	1.66	34	60	82	05/29	63	07/28	61	05/17	0	0	9	59	1	0	0	0	0	0	0
Perry County	305	20	1.66	23	57	55	06/22	54	03/30	48	09/14	0	0	6	57	0	0	0	0	0	0	0
Lyons	370	30	1.60	33	61	92	05/17	65	07/04	59	02/10	0	0	8	60	1	0	0	0	0	0	0
Altoona Non-Air Basin																						
Altoona	308	30	1.66	34	59	90	05/29	88	02/10	88	03/30	0	0	6	56	3	0	0	0	0	0	0
Williamsport Non-Air Basin																						
Williamsport	407	40	1.76	46	51	124	05/29	114	06/22	99	04/29	0	0	8	42	9	0	0	0	0	0	0
DEP Region 4 Non-Air Basin																						
State College	408	33	1.61	36	52	82	09/14	80	05/29	68	10/26	0	0	9	48	4	0	0	0	0	0	0
Johnstown Air Basin																						
East Conemaugh	J08	41	1.54	45	61	141	02/10	94	05/29	93	03/30	0	0	13	56	4	1	0	0	0	0	0

**** No Long-Term or Short-Term Air Quality Standards *****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

TOTAL SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Geometric Annual Mean	Geometric Standard Deviation	Arithmetic Annual Mean	Number Obs.	Daily Averages 1st Max 24HR Mean	1st Max Date MM/DD	2nd Max 24HR Mean	2nd Max Date MM/DD	3nd Max 24HR Mean	3nd Max Date MM/DD	Number Obs. >260	Number Obs. >150	Minimum 24 Hour Mean	Number of 24 Hour Values In Ranges 0 to 65	66 to 130	131 to 195	196 to 260	261 to 325	326 to 390	391 to 455	> 455
Monongahela Valley Air Basin																						
Monessen	M16	44	1.50	47	57	114	02/10	89	01/05	80	05/29	0	0	16	46	11	0	0	0	0	0	0
Lower Beaver Valley Air Basin																						
Vanport	B05	33	1.64	38	47	89	03/24	84	02/10	80	09/14	0	0	11	41	6	0	0	0	0	0	0
Ambridge	B07	36	1.63	41	51	133	02/10	113	09/26	87	03/24	0	0	14	45	5	1	0	0	0	0	0
DEP Region 5 Non-Air Basin																						
Washington	503	37	1.52	40	54	119	02/10	79	09/14	71	08/21	0	0	16	50	4	0	0	0	0	0	0
Upper Beaver Valley Air Basin																						
Ellwood City	B16	43	1.52	47	59	112	02/10	91	05/29	84	09/14	0	0	15	48	11	0	0	0	0	0	0
Erie Air Basin																						
Erie	E07	44	1.60	49	59	119	05/29	115	04/23	108	02/10	0	0	16	45	14	0	0	0	0	0	0
Shenango Valley Non-Air Basin																						
Farrell	602	35	1.53	38	54	114	02/10	78	09/14	70	05/29	0	0	12	51	3	0	0	0	0	0	0

**** No Long-Term or Short-Term Air Quality Standards *****

TOTAL SUSPENDED PARTICULATE MATTER
HISTORICAL TREND
ANNUAL GEOMETRIC MEANS
(Units: micrograms/cubic meter)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Southeast Pennsylvania Air Basin											
BRISTOL	(P01)	34	**	**	**	**	**	33	31	28	33
CHESTER	(P11)	48	39	40	34	36	44	43	43	55	40
CONSHOHOCKEN	(P12)	42	40	39	36	32	44	36	33	37	37
Allentown-Bethlehem-Easton Air Basin											
NAZARETH	(A24)	**	**	**	**	**	**	**	32	28	**
Scranton-Wilkes Barre Air Basin											
WILKES-BARRE	(S07)	40	38	45	35	33	42	37	35	35	33
DEP Region 2 Non-Air Basin											
PALMERTON	(205)	48	40	37	32	29	34	29	32	31	29
Reading Air Basin											
LAURELDALE	(R10)	47	47	48	41	41	48	50	51	53	51
Harrisburg Air Basin											
HARRISBURG	(H06)	47	42	42	35	35	43	43	40	36	38
LEMOYNE	(H15)	**	**	**	**	**	**	36	31	30	33
Lancaster Air Basin											
LANCASTER	(L04)	47	47	50	42	45	58	45	47	49	45
LANCASTER	(L05)	57	50	53	43	43	51	53	53	54	48
York Air Basin											
YORK	(Y02)	43	39	43	37	39	46	39	39	39	37
DEP Region 3 Non-Air Basin											
LYONS	(301)	32	33	32	28	27	37	36	34	32	30
PERRY COUNTY	(305)	25	21	25	19	21	26	25	21	20	20
LYONS	(370)	**	**	**	29	28	35	31	29	30	30

** Indicates less than 30 samples collected during year

TOTAL SUSPENDED PARTICULATE MATTER
HISTORICAL TREND
ANNUAL GEOMETRIC MEANS
(Units: micrograms/cubic meter)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Altoona Non-Air Basin											
ALTOONA	(308)	41	33	35	30	30	34	35	30	29	30
Williamsport Non-Air Basin											
WILLIAMSPORT	(407)	**	**	**	**	**	**	**	**	**	40
DEP Region 4 Non-Air Basin											
STATE COLLEGE	(408)	39	34	41	32	32	41	38	33	34	33
Johnstown Air Basin											
EAST CONEMAUGH	(J08	**	**	**	**	**	**	**	37	40	41
Monongahela Valley Air Basin											
MONESSEN	(M16)	**	**	**	**	**	**	**	**	44	44
Lower Beaver Valley Air Basin											
VANPORT	(B05)	44	38	40	31	32	50	**	35	35	33
AMBRIDGE	(B07)	45	44	42	37	40	57	**	47	39	36
DEP Region 5 Non-Air Basin											
WASHINGTON	(503)	49	45	43	41	41	51	46	**	38	37
Upper Beaver Valley Air Basin											
ELLWOOD CITY	(B16)	50	**	56	48	46	57	59	48	40	43
Erie Air Basin											
ERIE CENTRAL	(E07)	50	40	39	32	40	48	47	37	42	44
Shenango Valley Non-Air Basin											
FARRELL	(602)	51	50	54	38	36	42	42	39	37	35

** Indicates less than 30 samples collected during year

COMMWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

SULFATE SUSPENDED PARTICULATE MATTER SUMMARY

(UNITS: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Annual Mean	Number Obs.	Number 30 Day > 10	1st Max 30 Day Mean	1st Max 30 Day MM	2nd Max 30 Day Mean	2nd Max 30 Day MM	Number 24 Hour > 30	1st Max 24 Hour Mean	1st Max 24 Hour MM/DD	2nd Max 24 Hour Mean	2nd Max 24 Hour MM/DD
Southeast Pennsylvania Air Basin													
Conshohocken	P12	9.6	53	6	14.6	9	13.8	7	0	29.0	6/22	26.0	5/29
Allentown-Bethlehem-Easton Air Basin													
Nazareth	A24	6.3	17	0	6.4	4	5.6	3	0	14.5	1/5	9.5	4/17
Scranton-Wilkes-Barre Air Basin													
Wilkes-Barre	S07	8.3	43	4	18.5	9	17.0	7	0	27.5	6/22	24.6	9/26
DEP Region 2 Non-Air Basin													
Palmerton	205	8.6	61	3	13.9	7	13.2	9	0	22.9	7/28	19.9	9/14
Reading Air Basin													
Laureldale	R10	9.4	60	5	16.2	9	15.1	7	1	30.3	6/22	24.2	9/14
Harrisburg Air Basin													
Harrisburg	H06	9.5	49	4	15.0	7	13.7	9	0	29.9	6/22	22.5	7/28
Lancaster Air Basin													
Lancaster	L05	9.5	61	5	17.3	7	14.8	9	1	32.0	6/22	23.6	7/28
York Air Basin													
York	Y02	9.1	55	3	17.9	7	14.0	9	0	26.6	6/22	25.8	7/28
DEP Region 3 Non-Air Basin													
Perry County	305	6.9	56	3	11.0	7	10.9	6	0	26.7	6/22	17.8	7/28
Altoona Non-Air Basin													
Altoona	308	8.5	60	3	15.2	7	11.8	9	0	21.9	5/29	21.2	7/16

**** No Long-Term or Short-Term AIr Quality Standards ****

COMMWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

SULFATE SUSPENDED PARTICULATE MATTER SUMMARY

(UNITS: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Annual Mean	Number Obs.	Number 30 Day > 10	1st Max 30 Day Mean	1st Max 30 Day MM	2nd Max 30 Day Mean	2nd Max 30 Day MM	Number 24 Hour > 30	1st Max 24 Hour Mean	1st Max 24 Hour MM/DD	2nd Max 24 Hour Mean	2nd Max 24 Hour MM/DD
Williamsport Non-Air Basin													
Williamsport	407	10.0	51	4	15.9	6	15.1	9	1	36.2	6/22	24.2	9/14
DEP Region 4 Non-Air Basin													
State College	408	10.5	51	5	18.4	9	17.9	7	0	24.7	9/20	24.6	7/16
Johnstown Air Basin													
East Conemaugh	J08	10.3	61	4	17.5	7	15.3	9	0	25.0	5/29	22.5	7/28
Monongahela Valley Air Basin													
Monessen	M16	11.2	57	5	18.1	7	15.7	9	0	24.3	7/28	23.1	5/29
Lower Beaver Valley Air Basin													
Ambridge	B07	10.3	51	4	17.2	9	13.8	8	0	24.9	9/26	20.7	5/29
DEP Region 5 Non-Air Basin													
Washingon	503	10.3	54	5	16.5	7	16.0	9	0	21.9	7/28	20.8	5/29
Upper Beaver Valley Air Basin													
Ellwood City	B16	10.6	57	5	18.8	8	16.8	9	0	28.1	8/15	27.3	7/16
Erie Air Basin													
Erie	E07	9.3	59	4	16.4	9	13.1	6	0	26.1	9/14	24.7	9/20
Shenango Valley Non-Air Basin													
Farrell	602	9.8	54	5	16.9	9	13.6	7	0	25.3	7/16	22.7	8/15

**** No Long-Term or Short-Term AIr Quality Standards ****

SULFATE PARTICULATE MATTER HISTORICAL TREND
(Units: micrograms/cubic meter)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Southeast Pennsylvania Air Basin												
CONSHOHOCKEN	(P12)	16.4	16.0	25.3	17.1	23.1	21.1	16.3	16.7	23.9	14.6	Max 30-Day Mean
		33.8	28.6	25.3	18.2	26.8	41.8	19.8	36.3	34.9	29.0	Max 24-Hour Mean
Allentown-Bethlehem-Easton Air Basin												
NAZARETH	(A24)	**	**	**	**	**	**	**	**	**	**	Max 30-Day Mean
		**	**	**	**	**	**	**	**	**	**	Max 24-Hour Mean
Scranton-Wilkes-Barre Air Basin												
WILKES-BARRE	(S07)	15.5	15.4	16.4	12.7	29.2	24.6	16.1	12.5	23.0	18.5	Max 30-Day Mean
		28.8	24.0	32.5	20.6	29.3	31.5	26.1	25.5	35.8	27.5	Max 24-Hour Mean
DEP Region 2 Non-Air Basin												
PALMERTON	(205)	16.9	14.7	16.1	12.0	16.3	20.1	13.8	11.2	20.0	13.9	Max 30-Day Mean
		25.0	22.6	33.1	18.9	23.4	26.7	18.7	25.9	28.4	22.9	Max 24-Hour Mean
Reading Air Basin												
LAURELDALE	(R10)	17.0	18.6	18.4	14.6	13.0	22.4	19.1	13.4	24.2	16.2	Max 30-Day Mean
		32.6	31.3	36.7	21.5	28.5	35.1	22.6	25.8	35.1	30.3	Max 24-Hour Mean
Harrisburg Air Basin												
HARRISBURG	(H06)	16.3	17.0	18.3	13.3	13.6	21.7	13.5	11.4	19.7	15.0	Max 30-Day Mean
		32.4	30.8	33.3	19.7	26.1	32.7	22.0	22.6	29.5	29.9	Max 24-Hour Mean
Lancaster Air Basin												
LANCASTER	(L05)	15.6	16.5	16.7	18.7	13.4	21.2	14.7	11.8	23.2	17.3	Max 30-Day Mean
		36.4	31.3	26.4	18.7	25.3	32.2	21.0	24.3	34.8	32.0	Max 24-Hour Mean
York Air Basin												
YORK	(Y02)	16.3	16.2	16.1	15.0	16.0	23.1	14.9	11.9	21.4	17.9	Max 30-Day Mean
		36.3	28.5	30.3	18.3	30.4	40.5	19.0	22.6	32.0	26.6	Max 24-Hour Mean
DEP Region 3 Non-Air Basin												
PERRY COUNTY	(305)	13.8	14.0	12.6	9.9	21.7	17.9	12.9	8.6	15.7	11.0	Max 30-Day Mean
		29.1	22.7	25.6	18.9	23.0	33.3	17.7	14.7	28.7	26.7	Max 24-Hour Mean

** Indicates less than 30 samples collected during year

SULFATE PARTICULATE MATTER HISTORICAL TREND
(Units: micrograms/cubic meter)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Altoona Non-Air Basin												
ALTOONA	(308)	**	15.5	14.3	12.0	14.3	20.7	15.1	11.7	14.8	15.2	Max 30-Day Mean
		**	27.8	32.1	16.6	23.2	35.0	23.7	18.9	23.9	21.9	Max 24-Hour Mean
Williamsport Non-Air Basin												
WILLIAMSPORT	(407)	**	**	**	**	**	**	**	**	**	15.9	Max 30-Day Mean
		**	**	**	**	**	**	**	**	**	36.2	Max 24-Hour Mean
DEP Region 4 Non-Air Basin												
STATE COLLEGE	(408)	18.6	16.5	16.6	12.5	15.2	23.0	17.0	13.3	16.5	18.4	Max 30-Day Mean
		32.5	26.9	36.9	18.4	24.1	30.3	28.4	22.2	26.7	24.7	Max 24-Hour Mean
Johnstown Air Basin												
EAST CONEMAUGH	(J08)	**	**	**	**	**	**	**	12.7	17.9	17.5	Max 30-Day Mean
		**	**	**	**	**	**	**	19.5	26.3	25.0	Max 24-Hour Mean
Monongahela Valley Air Basin												
MONESSEN	(M16)	**	**	**	**	**	**	**	**	18.0	18.1	Max 30-Day Mean
		**	**	**	**	**	**	**	**	25.0	24.3	Max 24-Hour Mean
Lower Beaver Valley Air Basin												
AMBRIDGE	(B07)	19.1	18.6	21.0	13.9	19.7	23.9	**	16.1	14.4	17.2	Max 30-Day Mean
		29.5	33.5	31.6	25.6	33.1	36.5	**	46.9	25.1	24.9	Max 24-Hour Mean
DEP Region 5 Non-Air Basin												
WASHINGTON	(503)	20.4	18.9	18.7	16.5	19.3	28.8	15.3	**	14.1	16.5	Max 30-Day Mean
		39.8	34.9	29.5	27.2	26.4	37.1	22.2	**	23.8	21.9	Max 24-Hour Mean
Upper Beaver Valley Air Basin												
ELLWOOD CITY	(B16)	19.7	**	27.4	16.2	23.1	30.9	19.6	20.8	12.7	18.8	Max 30-Day Mean
		45.9	**	36.1	21.3	30.7	31.3	35.5	41.6	20.2	28.1	Max 24-Hour Mean
Erie Air Basin												
ERIE	(E07)	17.8	17.6	16.5	10.1	17.7	18.4	14.9	15.6	16.9	16.4	Max 30-Day Mean
		39.8	31.8	26.7	18.9	25.9	27.1	17.0	41.5	29.0	26.1	Max 24-Hour Mean
Shenango Valley Non-Air Basin												
FARRELL	(602)	16.2	20.0	16.2	14.3	15.5	16.7	12.9	18.0	12.3	16.9	Max 30-Day Mean
		34.2	39.2	28.5	28.5	25.9	27.0	23.0	39.4	18.8	25.3	Max 24-Hour Mean

** Indicates less than 30 samples collected during year

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

LEAD SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	1st Quarter Arithmetic Mean	1st Quarter Num. Obs.	2nd Quarter Arithmetic Mean	2nd Quarter Num. Obs.	3rd Quarter Arithmetic Mean	3rd Quarter Num. Obs.	4th Quarter Arithmetic Mean	4th Quarter Num. Obs.	Number Quarters > 1.5	Arithmetic Annual Mean	Arithmetic Num. Obs.
Southeast Pennsylvania Air Basin												
Chester	P11	0.04	14	0.04	14	0.04	14	0.04	16	0	0.04	58
Conshohocken	P12	0.03	13	0.03	15	0.04	15	0.03	10	0	0.03	53
Allentown-Bethlehem-Easton Air Basin												
Nazareth	A24	0.03	13	0.04	4	****	**	****	**	0	0.04	17
Scranton-Wilkes-Barre Air Basin												
Wilkes-Barre	S07	0.04	13	0.04	11	0.04	9	0.04	10	0	0.04	43
DEP Region 2 Non-Air Basin												
Palmerton	205	0.05	15	0.05	12	0.07	15	0.11	19	0	0.07	61
Reading Air Basin												
Laureldale	R10	0.31	15	0.21	14	0.15	13	0.26	16	0	0.24	58
Harrisburg Air Basin												
Harrisburg	H06	0.03	15	0.03	15	0.04	15	0.03	4	0	0.03	49
Lancaster Air Basin												
Lancaster	L05	0.04	15	0.04	15	0.04	15	0.04	16	0	0.04	61
York Air Basin												
York	Y02	0.04	15	0.04	14	0.05	15	0.04	11	0	0.04	55
DEP Region 3 Non-Air Basin												
Lyons	301	0.09	15	0.13	14	0.22	15	0.16	16	0	0.15	60
Lyons	370	0.13	15	0.28	15	0.17	15	0.20	16	0	0.19	61
Johnstown Air Basin												
East Conemaugh	J08	0.04	15	0.04	15	0.03	15	0.04	16	0	0.04	61
Monongahela Valley Air Basin												
Monessen	M16	0.03	15	0.03	15	0.04	15	0.03	12	0	0.03	57
Lower Beaver Valley Air Basin												
Vanport	B05	0.05	12	0.04	14	0.06	10	0.06	11	0	0.05	47
Erie Air Basin												
Erie	E07	0.04	15	0.04	15	0.04	14	0.04	15	0	0.04	59
Shenango Valley Non-Air Basin												
Farrell	602	0.03	15	0.04	11	0.04	14	0.04	14	0	0.04	54

***** Primary Quarterly Standard = 1.5 micrograms per cubic meter *****

LEAD PARTICULATE MATTER HISTORICAL TREND
MAXIMUM QUARTERLY MEANS
(Units: micrograms/cubic meter)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Southeast Pennsylvania Air Basin											
CHESTER	(P11)	**	**	**	**	**	0.05	0.05	0.04	0.05	0.04
CONSHOHOCKEN	(P12)	**	**	**	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Allentown-Bethlehem-Easton Air Basin											
NAZARETH	(A24)	**	**	**	**	**	**	**	**	**	**
Scranton-Wilkes-Barre Air Basin											
WILKES-BARRE	(S07)	0.06	0.06	0.06	0.05	0.05	0.05	0.06	0.04	0.04	0.04
DEP Region 2 Non-Air Basin											
PALMERTON	(205)	0.78	0.40	0.46	0.28	0.18	0.13	0.07	0.08	0.09	0.11
Reading Air Basin											
LAURELDALE	(R10)	0.50	0.59	0.60	0.43	0.59	0.56	0.29	0.27	0.30	0.31
Harrisburg Air Basin											
HARRISBURG	(H06)	0.05	0.06	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Lancaster Air Basin											
LANCASTER	(L05)	0.05	0.06	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
York Air Basin											
YORK	(Y02)	0.05	0.10	0.05	0.05	0.04	0.04	0.04	0.07	0.04	0.05
DEP Region 3 Non-Air Basin											
LYONS	(301)	0.31	0.32	0.33	0.17	0.14	0.12	0.17	0.17	0.29	0.22
LYONS	(370)	**	**	**	0.21	0.19	0.18	0.20	0.20	0.16	0.28
Johnstown Air Basin											
EAST CONEMAUGH	(J08)	**	**	**	**	**	**	**	0.04	0.04	0.04
Monongahela Valley Air Basin											
MONESSEN	(M16)	**	**	**	**	**	**	**	0.05	0.05	0.04
Lower Beaver Valley Air Basin											
VANPORT	(B05)	0.27	0.22	0.19	0.15	0.13	0.17	0.15	0.06	0.08	0.06
Erie Air Basin											
ERIE	(E07)	0.07	0.06	0.07	0.05	0.05	0.04	0.05	0.04	0.04	0.04
Shenango Valley Non-Air Basin											
FARRELL	(602)	0.12	0.10	0.09	0.07	0.05	0.05	0.05	0.07	0.04	0.04

** Indicates less than 30 samples collected during year

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

NITRATE SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Arithmetic Annual Mean	Num. Obs.	1st Max 24 Hour Mean	1st Max 24 Hour MM/DD	2nd Max 24 Hour Mean	2nd Max 24 Hour MM/DD	3nd Max 24 Hour Mean	3nd Max 24 Hour MM/DD	Minimum 24 Hour Mean
Southeast Pennsylvania Air Basin										
Conshohocken	P12	4.61	53	9.67	12/01	8.91	09/26	8.70	02/10	0.71
Scranton-Wilkes-Barre Air Basin										
Wilkes-Barre	S07	3.40	43	7.88	01/29	7.05	10/26	6.31	02/28	0.60
DEP Region 2 Non-Air Basin										
Palmerton	205	3.85	61	11.73	09/26	8.85	6/10	8.64	02/10	0.65
Reading Air Basin										
Laureldale	R10	4.75	60	15.05	09/26	11.54	02/10	9.58	09/14	0.76
Harrisburg Air Basin										
Harrisburg	H06	5.55	49	13.31	03/18	13.27	02/28	11.76	09/26	1.16
Lancaster Air Basin										
Lancaster	L05	5.81	60	14.86	09/26	11.70	02/28	10.30	01/05	1.59
York Air Basin										
York	Y02	5.05	55	11.17	01/05	10.57	02/28	9.97	09/26	1.15
DEP Region 3 Non-Air Basin										
Perry County	305	2.38	56	8.95	02/10	6.27	02/28	5.93	02/16	0.51
Altoona Non-Air Basin										
Altoona	308	2.94	59	6.75	02/16	6.19	02/10	5.90	11/19	0.45

***** No Long-Term or Short-Term Air Quality Standards *****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

NITRATE SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter)

YEAR: 1998

Site Name	PA Site Code	Arithmetic Annual Mean	Num. Obs.	1st Max 24 Hour Mean	1st Max 24 Hour MM/DD	2nd Max 24 Hour Mean	2nd Max 24 Hour MM/DD	3nd Max 24 Hour Mean	3nd Max 24 Hour MM/DD	Minimum 24 Hour Mean
Williamsport Non-Air Basin										
Wiliamsport	407	3.70	51	10.83	11/19	9.69	09/26	7.61	03/12	0.80
DEP Region 4 Non-Air Basin										
State College	408	4.07	51	11.03	11/19	8.69	09/14	7.76	10/26	0.79
Johnstown Air Basin										
East Conemaugh	J08	2.91	61	5.67	01/11	5.54	06/04	4.63	02/16	0.68
Monongahela Valley Air Basin										
Monessen	M16	3.56	57	7.85	01/05	5.38	02/22	5.34	03/24	1.20
Lower Beaver Valley Air Basin										
Ambridge	B07	3.64	51	7.45	03/18	6.38	02/10	6.30	09/14	1.10
DEP Region 5 Non-Air Basin										
Washington	503	3.47	54	5.85	09/14	5.47	08/21	5.39	04/29	0.70
Erie Air Basin										
Erie	E07	4.80	59	12.20	08/21	11.48	02/10	9.61	02/28	0.71
Shenango Valley Non-Air Basin										
Farrell	602	3.99	54	7.65	09/14	6.91	07/04	6.55	08/21	1.45

***** No Long-Term or Short-Term Air Quality Standards *****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PM-10 SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter / local conditions)

YEAR: 1998 (TEOM data from July-December)

				Daily Means										Number of 24 Hour Values In Ranges								
	PA	Arithmetic		1st Max		2nd Max		3rd Max		4th Max		Number	Minimum	0	26	51	76	101	126	151	176	
	Site	Annual	Number	24HR	Date	24HR	Date	24HR	Date	24HR	Date	Obs.	24 Hour	to	to	to	to	to	to	to	to	>
Site Name	Code	Mean	Obs.	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	>150	Mean	25	50	75	100	125	150	175	200	200
Southeast Pennsylvania Air Basin																						
Bristol (TEOM)	P01	24	183	70	08/24	59	07/04	57	08/23	52	08/25	0	6	111	67	5	0	0	0	0	0	0
Chester (TEOM)	P11	25	184	63	08/24	59	08/28	58	07/17	54	07/04	0	8	116	60	8	0	0	0	0	0	0
Norristown (TEOM)	P21	22	167	68	08/24	57	08/23	56	07/04	55	07/17	0	6	110	52	5	0	0	0	0	0	0
Coatesville	P26	32	58	103	02/10	65	11/19	64	07/28	63	07/04	0	6	24	26	7	0	1	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																						
Allentown (TEOM)	A19	17	164	54	08/24	50	07/17	48	07/29	46	09/15	0	4	127	36	1	0	0	0	0	0	0
Nazareth	A24	15	15	34	03/30	25	01/05	25	04/23	24	04/17	0	6	14	1	0	0	0	0	0	0	0
Freemansburg (TEOM)	A25	35	47	69	12/28	65	12/04	63	12/16	60	12/03	0	11	18	18	11	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																						
Scranton (TEOM)	S01	21	183	69	09/15	60	07/15	58	08/24	58	09/14	0	6	133	44	6	0	0	0	0	0	0
Pittston	S04	28	38	62	02/10	55	06/22	53	09/26	50	01/29	0	8	21	14	3	0	0	0	0	0	0
Wilkes-Barre	S07	22	40	48	06/22	48	07/04	46	09/26	44	09/20	0	7	27	13	0	0	0	0	0	0	0
Scranton	S15	29	39	65	02/10	56	09/14	51	01/29	51	07/28	0	9	26	8	5	0	0	0	0	0	0
Wilkes-Barre (TEOM)	S28	25	179	72	09/15	67	09/14	64	07/15	59	08/09	0	6	106	64	9	0	0	0	0	0	0
Reading Air Basin																						
Reading (TEOM)	R01	23	182	59	08/24	57	07/17	55	07/29	53	09/15	0	7	121	56	5	0	0	0	0	0	0
Temple	R09	29	58	73	02/10	62	06/22	61	05/29	54	07/04	0	9	25	28	5	0	0	0	0	0	0
Reading	R15	27	61	67	02/10	63	06/22	53	05/29	50	01/05	0	9	35	23	3	0	0	0	0	0	0
Harrisburg Air Basin																						
Harrisburg (TEOM)	H11	26	179	69	10/26	66	09/14	63	09/15	61	08/24	0	7	102	66	11	0	0	0	0	0	0

**** Primary and Secondary Air Quality Standards ****
**** Annual Mean = 50 micrograms per cubic meter ****
**** 24 Hour Mean = 150 micrograms per cubic meter ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PM-10 SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter / local conditions)

YEAR: 1998 (TEOM data from July-December)

				Daily Means										Number of 24 Hour Values In Ranges								
	PA	Arithmetic		1st Max		2nd Max		3rd Max		4th Max		Number	Minimum	0	26	51	76	101	126	151	176	
	Site	Annual	Number	24HR	Date	24HR	Date	24HR	Date	24HR	Date	Obs.	24 Hour	to	to	to	to	to	to	to	to	>
Site Name	Code	Mean	Obs.	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	>150	Mean	25	50	75	100	125	150	175	200	200
Lancaster Air Basin																						
Lancaster (TEOM)	L01	25	182	63	07/17	62	08/24	60	07/29	56	07/04	0	6	107	66	9	0	0	0	0	0	0
Lancaster	L05	33	57	69	06/22	63	02/10	60	07/04	57	05/29	0	8	20	32	5	0	0	0	0	0	0
York Air Basin																						
York (TEOM)	Y01	28	179	64	08/24	61	07/29	60	09/15	59	09/16	0	7	81	87	11	0	0	0	0	0	0
West York	Y07	29	55	60	01/05	57	06/22	55	03/30	54	07/28	0	8	27	21	7	0	0	0	0	0	0
DEP Region 3 Non-Air Basin																						
Perry County	305	22	56	57	06/22	51	09/14	47	07/04	46	07/28	0	6	37	17	2	0	0	0	0	0	0
Altoona Non-Air Basin																						
Altoona (TEOM)	308	24	173	59	09/15	54	09/14	53	07/15	53	07/16	0	4	115	52	6	0	0	0	0	0	0
Williamsport Non-Air Basin																						
Williamsport	407	26	52	64	09/14	57	06/22	53	09/26	48	09/20	0	9	30	19	3	0	0	0	0	0	0
Johnstown Air Basin																						
Johnstown (TEOM)	J01	28	184	67	07/15	66	09/15	59	07/14	59	08/24	0	7	87	84	13	0	0	0	0	0	0
Monongahela Valley Air Basin																						
Charleroi (TEOM)	M01	28	184	70	07/14	63	09/26	62	09/15	61	07/15	0	8	90	84	10	0	0	0	0	0	0
Monessen	M16	34	56	74	02/10	63	09/14	61	05/29	59	07/28	0	13	18	30	8	0	0	0	0	0	0

**** Primary and Secondary Air Quality Standards ****
**** Annual Mean = 50 micrograms per cubic meter ****
**** 24 Hour Mean = 150 micrograms per cubic meter ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PM-10 SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter / local conditions)

YEAR: 1998 (TEOM data from July-December)

				Daily Means										Number of 24 Hour Values In Ranges								
	PA	Arithmetic		1st Max		2nd Max		3rd Max		4th Max		Number	Minimum	0	26	51	76	101	126	151	176	
	Site	Annual	Number	24HR	Date	24HR	Date	24HR	Date	24HR	Date	Obs.	24 Hour	to	to	to	to	to	to	to	to	>
Site Name	Code	Mean	Obs.	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	>150	Mean	25	50	75	100	125	150	175	200	200
Lower Beaver Valley Air Basin																						
Baden (TEOM)	B01	29	143	76	08/05	66	07/14	61	09/14	60	09/15	0	10	63	70	9	1	0	0	0	0	0
Beaver Falls (TEOM)	B11	31	158	94	08/05	83	08/06	79	09/14	79	09/15	0	4	73	58	23	4	0	0	0	0	0
Baden	B17	26	12	53	05/29	39	06/22	30	06/10	29	05/05	0	13	7	4	1	0	0	0	0	0	0
Beaver Falls	B18	28	35	62	05/29	55	09/26	51	03/24	49	08/21	0	11	20	12	3	0	0	0	0	0	0
DEP Region 5 Non-Air Basin																						
Greensburg (TEOM)	513	***	0	***	**	***	**	***	**	***	**	0	***	0	0	0	0	0	0	0	0	0
Upper Beaver Valley Air Basin																						
New Castle	B21	41	55	85	02/10	84	08/21	79	01/05	77	07/16	0	11	14	28	8	5	0	0	0	0	0
New Castle (TEOM)	B21	34	180	82	09/14	78	08/05	76	11/13	74	07/15	0	8	72	73	32	3	0	0	0	0	0
Bessemer	B26	26	59	63	08/15	60	09/14	57	07/16	51	08/21	0	7	33	22	4	0	0	0	0	0	0
Erie Air Basin																						
Erie (TEOM)	E10	22	180	67	09/14	63	07/15	62	08/05	59	07/14	0	5	124	50	6	0	0	0	0	0	0
Shenango Valley Non-Air Basin																						
Farrell	602	29	55	81	08/15	79	02/10	75	09/14	59	07/16	0	9	28	23	2	2	0	0	0	0	0

**** Primary and Secondary Air Quality Standards ****
**** Annual Mean = 50 micrograms per cubic meter ****
**** 24 Hour Mean = 150 micrograms per cubic meter ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PM-10 SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter / standard conditions)

YEAR: 1998 (January - June)

				Daily Means										Number of 24 Hour Values In Ranges								
	PA	Arithmetic		1st Max		2nd Max		3rd Max		4th Max		Number	Minimum	0	26	51	76	101	126	151	176	
	Site	Annual	Number	24HR	Date	24HR	Date	24HR	Date	24HR	Date	Obs.	24 Hour	to	to	to	to	to	to	to	to	>
Site Name	Code	Mean	Obs.	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	>150	Mean	25	50	75	100	125	150	175	200	200
Southeast Pennsylvania Air Basin																						
Bristol (TEOM)	P01	21	179	60	06/26	57	06/25	53	05/29	50	05/31	0	6	130	46	3	0	0	0	0	0	0
Chester (TEOM)	P11	25	177	96	03/21	72	04/09	65	02/17	61	02/04	0	7	115	51	10	1	0	0	0	0	0
Norristown (TEOM)	P21	19	171	62	06/26	54	06/25	52	06/22	50	05/16	0	5	136	32	3	0	0	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																						
Allentown (TEOM)	A19	17	181	41	02/10	41	06/25	40	05/16	38	05/29	0	4	152	29	0	0	0	0	0	0	0
Freemansburg (TEOM)	A25	17	124	46	02/10	37	02/09	36	03/27	36	04/30	0	4	107	17	0	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																						
Scranton (TEOM)	S01	20	181	59	06/25	54	02/09	53	03/27	53	05/29	0	5	132	44	5	0	0	0	0	0	0
Wilkes-Barre (TEOM)	S28	22	175	64	06/25	53	05/16	52	03/27	49	02/10	0	5	122	50	3	0	0	0	0	0	0
Reading Air Basin																						
Reading (TEOM)	R01	18	180	55	06/25	51	06/22	48	05/29	46	06/23	0	5	152	26	2	0	0	0	0	0	0
Harrisburg Air Basin																						
Harrisburg (TEOM)	H11	20	174	66	06/22	65	06/23	60	06/25	54	06/26	0	7	133	36	5	0	0	0	0	0	0
Lancaster Air Basin																						
Lancaster (TEOM)	L01	22	178	64	06/22	62	05/16	62	06/23	62	06/25	0	6	130	41	7	0	0	0	0	0	0
York Air Basin																						
York (TEOM)	Y01	23	180	63	05/20	60	06/25	55	06/22	54	05/19	0	6	122	51	7	0	0	0	0	0	0

**** Primary and Secondary Air Quality Standards ****
**** Annual Mean = 50 micrograms per cubic meter ****
**** 24 Hour Mean = 150 micrograms per cubic meter ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

PM-10 SUSPENDED PARTICULATE MATTER SUMMARY

(Units: micrograms per cubic meter / standard conditions)

YEAR: 1998 (January - June)

				Daily Means										Number of 24 Hour Values In Ranges								
	PA	Arithmetic		1st Max		2nd Max		3rd Max		4th Max		Number	Minimum	0	26	51	76	101	126	151	176	
	Site	Annual	Number	24HR	Date	24HR	Date	24HR	Date	24HR	Date	Obs.	24 Hour	to	to	to	to	to	to	to	to	>
Site Name	Code	Mean	Obs.	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	Mean	MM/DD	>150	Mean	25	50	75	100	125	150	175	200	200
Altoona Non-Air Basin																						
Altoona (TEOM)	308	20	176	61	05/16	58	02/10	58	06/25	55	06/26	0	6	131	40	5	0	0	0	0	0	0
Johnstown Air Basin																						
Johnstown (TEOM)	J01	24	177	65	05/16	64	02/02	64	06/25	63	03/31	0	6	113	53	11	0	0	0	0	0	0
Monongahela Valley Air Basin																						
Charleroi (TEOM)	M01	23	172	74	05/16	62	05/28	61	05/15	59	06/25	0	6	114	50	8	0	0	0	0	0	0
Lower Beaver Valley Air Basin																						
Baden (TEOM)	B01	27	167	80	05/16	71	02/10	68	02/09	68	05/15	0	7	92	62	12	1	0	0	0	0	0
Beaver Falls (TEOM)	B11	25	179	87	05/16	86	05/15	77	05/28	68	05/29	0	9	117	49	10	3	0	0	0	0	0
DEP Region 5 Non-Air Basin																						
Greensburg (TEOM)	513	22	151	78	02/09	71	02/10	65	05/16	60	05/28	0	7	110	35	5	1	0	0	0	0	0
Upper Beaver Valley Air Basin																						
New Castle (TEOM)	B21	31	180	94	03/27	93	02/02	93	03/28	90	03/31	0	9	86	70	17	7	0	0	0	0	0
Erie Air Basin																						
Erie (TEOM)	E10	19	170	70	05/19	61	05/16	59	02/10	54	06/25	0	6	136	29	5	0	0	0	0	0	0

**** Primary and Secondary Air Quality Standards ****
**** Annual Mean = 50 micrograms per cubic meter ****
**** 24 Hour Mean = 150 micrograms per cubic meter ****

PM-10 PARTICULATE MATTER HISTORICAL TREND
(Units: micrograms per cubic meter)
(Standard Conditions: 1989-97)
(Local Conditions: 1998)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Southeast Pennsylvania Air Basin												
BRISTOL (TEOM)	(P01)	**	**	**	**	**	**	21	21	20	23	Annual Mean
		**	**	**	**	**	**	75	58	61	60	2nd Max 24-Hour Mean
CHESTER (TEOM)	(P11)	**	**	**	**	**	**	25	24	24	25	Annual Mean
		**	**	**	**	**	**	105	69	76	72	2nd Max 24-Hour Mean
NORRISTOWN (TEOM)	(P21)	**	**	**	**	**	**	**	22	21	21	Annual Mean
		**	**	**	**	**	**	**	64	79	62	2nd Max 24-Hour Mean
COATESVILLE	(P26)	**	34	36	27	31	34	32	28	35	32	Annual Mean
		**	87	91	47	78	71	83	69	79	65	2nd Max 24-Hour Mean
Allentown-Bethlehem-Easton Air Basin												
ALLENTOWN (TEOM)	(A19)	**	**	**	**	**	**	**	20	19	17	Annual Mean
		**	**	**	**	**	**	**	54	59	50	2nd Max 24-Hour Mean
NAZARETH	(A24)	**	**	**	**	**	**	**	26	24	**	Annual Mean
		**	**	**	**	**	**	**	44	51	**	2nd Max 24-Hour Mean
FREEMANSBURG (TEOM)	(A25)	**	**	**	**	**	**	**	**	**	26	Annual Mean
		**	**	**	**	**	**	**	**	**	65	2nd Max 24-Hour Mean
Scranton-Wilkes Barre Air Basin												
SCRANTON (TEOM)	(S01)	**	**	**	**	**	**	23	21	20	21	Annual Mean
		**	**	**	**	**	**	76	61	69	60	2nd Max 24-Hour Mean
PITTSTON	(S04)	32	26	30	29	28	30	26	25	26	28	Annual Mean
		63	64	64	50	71	64	65	44	53	55	2nd Max 24-Hour Mean
WILKES-BARRE	(S07)	28	24	29	24	24	27	24	23	24	22	Annual Mean
		61	63	66	44	57	60	64	57	51	48	2nd Max 24-Hour Mean
SCRANTON	(S15)	26	26	28	23	27	29	26	24	26	29	Annual Mean
		51	56	65	41	72	60	64	49	60	56	2nd Max 24-Hour Mean
WILKES-BARRE (TEOM)	(S28)	**	**	**	**	**	**	21	21	21	24	Annual Mean
		**	**	**	**	**	**	60	60	67	67	2nd Max 24-Hour Mean
Reading Air Basin												
READING (TEOM)	(R01)	**	**	**	**	**	**	**	22	21	21	Annual Mean
		**	**	**	**	**	**	**	52	61	57	2nd Max 24-Hour Mean
TEMPLE	(R09)	**	**	**	**	**	**	**	30	30	29	Annual Mean
		**	**	**	**	**	**	**	57	58	62	2nd Max 24-Hour Mean
READING	(R15)	**	**	**	**	**	**	**	29	29	27	Annual Mean
		**	**	**	**	**	**	**	66	67	63	2nd Max 24-Hour Mean

** Indicates less than 30 discrete samples collected or less than 50 percent continuous data (TEOM)

PM-10 PARTICULATE MATTER HISTORICAL TREND
(Units: micrograms per cubic meter)
(Standard Conditions: 1989-97)
(Local Conditions: 1998)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Harrisburg Air Basin												
HARRISBURG (TEOM)	(H11)	**	**	**	**	25	24	22	23	22	23	Annual Mean
		**	**	**	**	64	72	67	63	67	66	2nd Max 24-Hour Mean
Lancaster Air Basin												
LANCASTER (TEOM)	(L01)	**	**	**	**	**	**	27	24	23	24	Annual Mean
		**	**	**	**	**	**	72	69	76	63	2nd Max 24-Hour Mean
LANCASTER	(L05)	**	31	30	27	31	38	33	31	34	33	Annual Mean
		**	59	51	45	68	117	73	63	83	63	2nd Max 24-Hour Mean
York Air Basin												
YORK (TEOM)	(Y01)	**	**	**	**	**	**	**	**	23	26	Annual Mean
		**	**	**	**	**	**	**	**	75	63	2nd Max 24-Hour Mean
WEST YORK	(Y07)	31	30	32	27	31	32	30	29	31	29	Annual Mean
		57	63	69	47	77	80	66	51	74	57	2nd Max 24-Hour Mean
DEP Region 3 Non-Air Basin												
PERRY COUNTY	(305)	21	19	22	18	21	22	21	19	22	22	Annual Mean
		60	45	48	30	58	59	59	39	56	51	2nd Max 24-Hour Mean
Altoona Non-Air Basin												
ALTOONA (TEOM)	(308)	**	**	**	**	**	**	25	23	21	22	Annual Mean
		**	**	**	**	**	**	70	60	67	59	2nd Max 24-Hour Mean
Williamsport Non-Air Basin												
WILLIAMSPORT	(407)	**	**	**	**	**	**	**	**	**	26	Annual Mean
		**	**	**	**	**	**	**	**	**	57	2nd Max 24-Hour Mean
Johnstown Air Basin												
JOHNSTOWN (TEOM)	(J01)	**	**	**	**	**	**	**	28	24	26	Annual Mean
		**	**	**	**	**	**	**	63	67	66	2nd Max 24-Hour Mean
Monongahela Valley Air Basin												
CHARLEROI (TEOM)	(M01)	**	**	**	**	**	**	26	26	24	26	Annual Mean
		**	**	**	**	**	**	74	72	60	70	2nd Max 24-Hour Mean
MONESSEN	(M16)	**	**	**	**	**	**	**	**	32	34	Annual Mean
		**	**	**	**	**	**	**	**	62	63	2nd Max 24-Hour Mean

** Indicates less than 30 discrete samples collected or less than 50 percent continuous data (TEOM)

PM-10 PARTICULATE MATTER HISTORICAL TREND
(Units: micrograms per cubic meter)
(Standard Conditions: 1989-97)
(Local Conditions: 1998)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Lower Beaver Valley Air Basin												
BADEN (TEOM)	(B01)	**	**	**	**	**	**	**	**	28	28	Annual Mean
		**	**	**	**	**	**	**	**	72	76	2nd Max 24-Hour Mean
BEAVER FALLS (TEOM)	(B11)	**	**	**	**	**	**	**	26	27	28	Annual Mean
		**	**	**	**	**	**	**	76	87	87	2nd Max 24-Hour Mean
BADEN	(B17)	31	24	27	20	22	27	**	22	27	**	Annual Mean
		66	51	60	50	64	58	**	50	56	**	2nd Max 24-Hour Mean
BEAVER FALLS	(B18)	33	26	30	24	28	32	**	28	28	28	Annual Mean
		64	55	66	61	57	67	**	52	56	55	2nd Max 24-Hour Mean
DEP Region 5 Non-Air Basin												
GREENSBURG (TEOM)	(513)	**	**	**	**	**	**	**	**	**	22	Annual Mean
		**	**	**	**	**	**	**	**	**	71	2nd Max 24-Hour Mean
Upper Beaver Valley Air Basin												
NEW CASTLE	(B21)	39	34	37	31	31	36	43	32	37	41	Annual Mean
		93	75	66	69	82	94	104	67	77	84	2nd Max 24-Hour Mean
NEW CASTLE (TEOM)	(B21)	**	**	**	**	**	**	**	33	33	33	Annual Mean
		**	**	**	**	**	**	**	91	94	93	2nd Max 24-Hour Mean
BESSEMER	(B26)	**	**	**	**	**	29	27	27	26	26	Annual Mean
		**	**	**	**	**	61	58	43	47	60	2nd Max 24-Hour Mean
Erie Air Basin												
ERIE (TEOM)	(E10)	**	**	**	**	**	**	**	20	20	21	Annual Mean
		**	**	**	**	**	**	**	61	68	67	2nd Max 24-Hour Mean
Shenango Valley Non-Air Basin												
FARRELL	(602)	35	30	36	27	28	30	28	29	28	29	Annual Mean
		88	68	73	58	56	68	72	52	49	79	2nd Max 24-Hour Mean

** Indicates less than 30 discrete samples collected or less than 50 percent continuous data (TEOM)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

SULFUR DIOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

				Block Averages					Daily Averages					Number of 24 Hour Values In Ranges							
	PA	Percent		Number	1st Max		2nd Max		Number	1st Max		2nd Max		.00	.05	.09	.13	.17	.21	.25	
	Site	Valid	Annual	3 HR	3 HR	Date	3 HR	Date	24 HR	24 HR	Date	24 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	Mean	> 0.50	Mean	MM/DD/HH	Mean	MM/DD/HH	> 0.14	Mean	MM/DD	Mean	MM/DD	.04	.08	.12	.16	.20	.24	.28	.28
Southeast Pennsylvania Air Basin																					
Bristol	P01	97.8	0.008	0	0.053	02/04/11	0.043	02/04/17	0	0.027	12/16	0.024	12/03	355	0	0	0	0	0	0	0
Chester	P11	94.9	0.009	0	0.070	12/03/20	0.048	03/30/11	0	0.028	12/16	0.027	12/03	346	0	0	0	0	0	0	0
Norristown	P21	99.4	0.006	0	0.034	12/16/14	0.029	12/10/14	0	0.023	02/10	0.022	12/16	363	0	0	0	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																					
Allentown	A19	99.0	0.008	0	0.050	01/20/20	0.047	01/16/02	0	0.034	01/27	0.030	01/16	362	0	0	0	0	0	0	0
Freemansburg	A25	99.0	0.006	0	0.050	12/16/11	0.041	12/16/23	0	0.030	12/16	0.027	01/02	361	0	0	0	0	0	0	0
Easton	A41	95.8	0.011	0	0.079	05/14/11	0.076	10/05/11	0	0.035	03/15	0.033	12/16	350	0	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																					
Scranton	S01	97.5	0.005	0	0.045	12/16/14	0.039	12/16/20	0	0.037	12/16	0.026	02/10	356	0	0	0	0	0	0	0
Wilkes-Barre	S28	99.0	0.006	0	0.043	12/16/14	0.040	06/19/20	0	0.031	12/16	0.021	11/13	361	0	0	0	0	0	0	0
Reading Air Basin																					
Reading	R01	98.9	0.009	0	0.103	10/17/11	0.096	03/30/11	0	0.024	12/16	0.022	11/14	362	0	0	0	0	0	0	0
Reading	R20	97.5	0.009	0	0.068	09/26/11	0.057	04/16/23	0	0.026	12/15	0.023	01/03	354	0	0	0	0	0	0	0
Harrisburg Air Basin																					
Harrisburg	H11	95.9	0.006	0	0.072	06/21/17	0.043	12/13/20	0	0.025	12/13	0.021	12/16	348	0	0	0	0	0	0	0
Lancaster Air Basin																					
Lancaster	L01	98.7	0.006	0	0.071	02/09/14	0.047	03/01/14	0	0.023	07/28	0.020	02/09	362	0	0	0	0	0	0	0

**** Primary Annual Mean = 0.03 parts per million ****
**** Primary 24 Hour Mean = 0.14 parts per million ****
**** Seconday 3 Hour Mean = 0.50 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

SULFUR DIOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

				Block Averages					Daily Averages					Number of 24 Hour Values In Ranges							
	PA	Percent		Number	1st Max		2nd Max		Number	1st Max		2nd Max		.00	.05	.09	.13	.17	.21	.25	
	Site	Valid	Annual	3 HR	3 HR	Date	3 HR	Date	24 HR	24 HR	Date	24 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	Mean	> 0.50	Mean	MM/DD/HH	Mean	MM/DD/HH	> 0.14	Mean	MM/DD	Mean	MM/DD	.04	.08	.12	.16	.20	.24	.28	.28
York Air Basin																					
York	Y01	99.2	0.008	0	0.066	08/12/11	0.064	08/19/11	0	0.027	08/19	0.023	12/16	365	0	0	0	0	0	0	0
DEP Region 3 Non-Air Basin																					
Perry County	305	96.1	0.003	0	0.041	12/13/14	0.027	01/22/14	0	0.013	12/13	0.012	01/22	342	0	0	0	0	0	0	0
Altoona Non-Air Basin																					
Altoona	308	95.6	0.008	0	0.069	12/16/11	0.061	12/16/05	0	0.042	12/16	0.032	10/25	348	0	0	0	0	0	0	0
Williamsport Non-Air Basin																					
Williamsport	407	98.3	0.005	0	0.069	05/06/14	0.040	12/16/14	0	0.025	12/16	0.021	05/06	359	0	0	0	0	0	0	0
Johnstown Air Basin																					
Johnstown	J01	96.3	0.008	0	0.124	07/18/11	0.080	10/31/14	0	0.029	07/18	0.027	10/29	352	0	0	0	0	0	0	0
Monongahela Valley Air Basin																					
Charleroi	M01	98.3	0.009	0	0.065	12/15/17	0.056	02/19/20	0	0.030	12/15	0.025	02/06	358	0	0	0	0	0	0	0
Lower Beaver Valley Air Basin																					
Baden	B01	98.2	0.013	0	0.095	02/10/14	0.092	01/17/08	0	0.035	01/17	0.034	12/16	357	0	0	0	0	0	0	0
Beaver Falls	B11	99.0	0.007	0	0.100	02/10/14	0.079	01/17/08	0	0.036	02/10	0.034	01/17	362	0	0	0	0	0	0	0
Hookstown	B23	95.1	0.013	0	0.150	07/19/11	0.129	08/15/14	0	0.054	02/10	0.046	08/15	341	3	0	0	0	0	0	0
Brighton Township	B27	99.3	0.016	0	0.310	05/15/05	0.208	06/09/02	0	0.097	05/15	0.094	02/10	347	15	2	0	0	0	0	0

**** Primary Annual Mean = 0.03 parts per million ****
**** Primary 24 Hour Mean = 0.14 parts per million ****
**** Seconday 3 Hour Mean = 0.50 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

SULFUR DIOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

					Block Averages					Daily Averages				Number of 24 Hour Values In Ranges							
	PA	Percent		Number	1st Max		2nd Max		Number	1st Max		2nd Max		.00	.05	.09	.13	.17	.21	.25	
	Site	Valid	Annual	3 HR	3 HR	Date	3 HR	Date	24 HR	24 HR	Date	24 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	Mean	> 0.50	Mean	MM/DD/HH	Mean	MM/DD/HH	> 0.14	Mean	MM/DD	Mean	MM/DD	.04	.08	.12	.16	.20	.24	.28	.28
Allegheny County Air Basin																					
Pittsburgh	D12	98.2	0.005	0	0.049	02/10/14	0.047	02/26/14	0	0.019	02/10	0.014	11/13	359	0	0	0	0	0	0	0
DEP Region 5 Non-Air Basin																					
Florence	504	98.4	0.013	0	0.116	03/26/23	0.102	11/29/14	0	0.043	03/26	0.043	01/03	360	0	0	0	0	0	0	0
Washington	508	99.4	0.010	0	0.083	06/23/14	0.073	12/16/02	0	0.041	12/16	0.040	11/13	363	0	0	0	0	0	0	0
Greensburg	513	95.5	0.009	0	0.073	02/26/11	0.066	03/07/14	0	0.041	12/15	0.033	03/07	343	0	0	0	0	0	0	0
Upper Beaver Valley Air Basin																					
New Castle	B21	97.1	0.009	0	0.134	07/16/11	0.117	08/07/11	0	0.038	08/07	0.032	11/22	353	0	0	0	0	0	0	0
Erie Air Basin																					
Erie	E10	98.2	0.010	0	0.172	01/08/08	0.138	03/21/02	0	0.090	01/08	0.068	01/16	354	5	1	0	0	0	0	0
Shenango Valley Non-Air Basin																					
Farrell	606	99.3	0.008	0	0.081	07/15/20	0.063	01/17/14	0	0.031	10/27	0.029	02/10	364	0	0	0	0	0	0	0
DEP Region 6 Non-Air Basin																					
Warren	611	97.1	0.008	0	0.115	09/01/08	0.103	10/30/08	0	0.035	10/30	0.028	02/10	356	0	0	0	0	0	0	0
Warren	612	97.2	0.016	0	0.270	10/27/05	0.248	10/25/02	0	0.108	10/27	0.098	02/10	337	16	2	0	0	0	0	0
Special Purpose Monitoring Sites																					
Kunkletown	212	53.2	0.004	0	0.037	05/01/02	0.027	10/25/20	0	0.018	10/25	0.014	05/01	193	0	0	0	0	0	0	0
Holbrook	514	28.1	0.010	0	0.057	07/15/17	0.038	09/12/11	0	0.022	09/16	0.021	09/12	97	0	0	0	0	0	0	0

**** Primary Annual Mean = 0.03 parts per million ****
**** Primary 24 Hour Mean = 0.14 parts per million ****
**** Seconday 3 Hour Mean = 0.50 parts per million ****

SULFUR DIOXIDE
HISTORICAL TREND
(Units: parts per million)

STATION & CODE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Southeast Pennsylvania Air Basin											
BRISTOL	0.008	0.008	0.008	0.008	0.008	0.008	0.006	0.007	0.007	0.008	Annual Mean
P01	0.036	0.038	0.031	0.030	0.027	0.040	0.023	0.028	0.029	0.024	2nd Max 24-Hour Mean
	0.055	0.062	0.053	0.061	0.047	0.076	0.048	0.043	0.043	0.043	2nd Max 3-Hour Mean
CHESTER	0.010	0.009	0.008	0.008	0.009	0.010	0.008	0.008	0.008	0.009	Annual Mean
P11	0.035	0.029	0.027	0.031	0.026	0.035	0.028	0.025	0.026	0.027	2nd Max 24-Hour Mean
	0.085	0.067	0.065	0.057	0.046	0.074	0.054	0.048	0.063	0.048	2nd Max 3-Hour Mean
NORRISTOWN	0.009	0.008	0.008	0.008	0.008	0.010	0.009	0.008	0.008	0.006	Annual Mean
P21	0.039	0.032	0.031	0.026	0.029	0.045	0.025	0.028	0.025	0.022	2nd Max 24-Hour Mean
	0.067	0.066	0.058	0.051	0.049	0.066	0.037	0.043	0.048	0.029	2nd Max 3-Hour Mean
Allentown-Bethlehem-Easton Air Basin											
ALLENTOWN	0.010	0.008	0.007	0.006	0.007	0.008	0.006	0.006	0.008	0.008	Annual Mean
A19	0.055	0.037	0.041	0.028	0.034	0.053	0.028	0.035	0.030	0.030	2nd Max 24-Hour Mean
	0.086	0.064	0.082	0.042	0.050	0.079	0.050	0.052	0.058	0.047	2nd Max 3-Hour Mean
FREEMANSBURG	***	***	***	***	***	***	***	***	***	0.006	Annual Mean
A25	***	***	***	***	***	***	***	***	***	0.027	2nd Max 24-Hour Mean
	***	***	***	***	***	***	***	***	***	0.041	2nd Max 3-Hour Mean
EASTON	0.008	0.008	0.009	0.008	0.006	0.008	0.006	0.006	0.010	0.011	Annual Mean
A41	0.036	0.037	0.033	0.029	0.024	0.041	0.026	0.021	0.027	0.033	2nd Max 24-Hour Mean
	0.070	0.073	0.052	0.046	0.052	0.060	0.048	0.046	0.045	0.076	2nd Max 3-Hour Mean
Scranton-Wilkes Barre Air Basin											
SCRANTON	0.009	0.010	0.011	0.009	0.008	0.007	0.005	0.007	0.006	0.005	Annual Mean
S01	0.043	0.045	0.045	0.031	0.025	0.034	0.023	0.033	0.031	0.026	2nd Max 24-Hour Mean
	0.068	0.064	0.114	0.081	0.044	0.087	0.068	0.043	0.050	0.039	2nd Max 3-Hour Mean
WILKES BARRE	0.009	0.010	0.006	0.006	0.006	0.007	0.005	0.006	0.007	0.006	Annual Mean
S28	0.045	0.052	0.032	0.031	0.026	0.034	0.027	0.023	0.026	0.021	2nd Max 24-Hour Mean
	0.071	0.071	0.047	0.072	0.047	0.058	0.056	0.043	0.047	0.040	2nd Max 3-Hour Mean
Reading Air Basin											
READING	0.010	0.009	0.008	0.008	0.009	0.010	0.009	0.009	0.008	0.009	Annual Mean
R01	0.040	0.031	0.028	0.023	0.027	0.036	0.032	0.037	0.028	0.022	2nd Max 24-Hour Mean
	0.084	0.077	0.073	0.069	0.092	0.084	0.072	0.094	0.067	0.096	2nd Max 3-Hour Mean
READING CBD	0.014	0.012	0.011	0.009	0.010	0.012	0.009	0.010	0.009	0.009	Annual Mean
R20	0.052	0.055	0.039	0.030	0.038	0.043	0.026	0.035	0.031	0.023	2nd Max 24-Hour Mean
	0.097	0.084	0.076	0.052	0.064	0.078	0.069	0.069	0.090	0.057	2nd Max 3-Hour Mean

*** Indicates less than 50 percent valid data for the year

SULFUR DIOXIDE
HISTORICAL TREND
(Units: parts per million)

STATION & CODE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Harrisburg Air Basin											
HARRISBURG	0.008	0.007	0.008	0.007	0.006	0.007	0.005	0.005	0.007	0.006	Annual Mean
H11	0.037	0.024	0.025	0.023	0.025	0.040	0.020	0.022	0.022	0.021	2nd Max 24-Hour Mean
	0.067	0.050	0.065	0.058	0.043	0.055	0.065	0.047	0.049	0.043	2nd Max 3-Hour Mean
Lancaster Air Basin											
LANCASTER	0.007	0.006	0.006	0.006	0.007	0.006	0.006	0.005	0.007	0.006	Annual Mean
L01	0.036	0.028	0.023	0.018	0.026	0.030	0.018	0.021	0.023	0.020	2nd Max 24-Hour Mean
	0.069	0.070	0.047	0.052	0.058	0.045	0.037	0.036	0.051	0.047	2nd Max 3-Hour Mean
York Air Basin											
YORK	0.007	0.007	0.007	0.007	0.008	0.009	0.006	0.007	0.009	0.008	Annual Mean
Y01	0.035	0.023	0.020	0.034	0.032	0.041	0.020	0.022	0.026	0.023	2nd Max 24-Hour Mean
	0.080	0.072	0.069	0.084	0.069	0.071	0.062	0.055	0.073	0.064	2nd Max 3-Hour Mean
DEP Region 3 Non-Air Basin											
PERRY COUNTY	0.004	0.004	0.004	0.004	0.005	0.007	0.004	0.005	0.004	0.003	Annual Mean
305	0.021	0.016	0.016	0.014	0.017	0.023	0.014	0.020	0.021	0.012	2nd Max 24-Hour Mean
	0.043	0.032	0.033	0.034	0.035	0.040	0.050	0.038	0.033	0.027	2nd Max 3-Hour Mean
Altoona Non-Air Basin											
ALTOONA	0.011	0.011	0.010	0.009	0.009	0.010	0.008	0.008	0.010	0.008	Annual Mean
308	0.059	0.062	0.044	0.046	0.052	0.057	0.037	0.033	0.046	0.032	2nd Max 24-Hour Mean
	0.102	0.117	0.082	0.093	0.073	0.108	0.067	0.071	0.070	0.061	2nd Max 3-Hour Mean
Williamsport Non-Air Basin											
WILLIAMSPORT	0.007	0.006	0.007	0.007	0.006	0.006	0.006	0.006	0.008	0.005	Annual Mean
407	0.042	0.025	0.025	0.026	0.025	0.042	0.021	0.028	0.028	0.021	2nd Max 24-Hour Mean
	0.069	0.049	0.047	0.072	0.045	0.063	0.046	0.052	0.050	0.040	2nd Max 3-Hour Mean
Johnstown Air Basin											
JOHNSTOWN	0.016	0.014	0.015	0.013	0.015	0.013	0.012	0.011	0.009	0.008	Annual Mean
J01	0.078	0.046	0.043	0.052	0.049	0.054	0.042	0.034	0.030	0.027	2nd Max 24-Hour Mean
	0.129	0.132	0.134	0.106	0.153	0.112	0.128	0.068	0.069	0.080	2nd Max 3-Hour Mean
Monongahela Valley Air Basin											
CHARLEROI	0.013	0.011	0.012	0.012	0.011	0.011	0.009	0.008	0.009	0.009	Annual Mean
M01	0.053	0.038	0.037	0.038	0.036	0.063	0.030	0.033	0.035	0.025	2nd Max 24-Hour Mean
	0.115	0.101	0.093	0.140	0.084	0.129	0.097	0.084	0.074	0.056	2nd Max 3-Hour Mean

*** Indicates less than 50 percent valid data for the year

SULFUR DIOXIDE
HISTORICAL TREND
(Units: parts per million)

STATION & CODE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Lower Beaver Valley Air Basin											
BADEN	0.012	0.012	0.012	0.013	0.013	0.012	0.009	0.010	0.012	0.013	Annual Mean
B01	0.046	0.045	0.043	0.045	0.046	0.065	0.031	0.027	0.033	0.034	2nd Max 24-Hour Mean
	0.140	0.090	0.098	0.108	0.103	0.124	0.068	0.059	0.069	0.092	2nd Max 3-Hour Mean
BEAVER FALLS	0.013	0.013	0.013	0.012	0.012	0.012	0.009	0.007	0.009	0.007	Annual Mean
B11	0.056	0.046	0.048	0.068	0.040	0.059	0.030	0.038	0.034	0.034	2nd Max 24-Hour Mean
	0.118	0.116	0.117	0.125	0.095	0.127	0.075	0.078	0.082	0.079	2nd Max 3-Hour Mean
HOOKSTOWN	0.014	0.020	0.020	0.012	0.017	0.018	0.012	0.011	0.011	0.013	Annual Mean
B23	0.119	0.088	0.068	0.088	0.075	0.072	0.046	0.038	0.049	0.046	2nd Max 24-Hour Mean
	0.307	0.240	0.172	0.181	0.178	0.166	0.127	0.105	0.163	0.129	2nd Max 3-Hour Mean
BRIGHTON TWP	***	***	***	***	***	0.015	0.015	0.015	0.015	0.016	Annual Mean
B27	***	***	***	***	***	0.092	0.080	0.058	0.078	0.094	2nd Max 24-Hour Mean
	***	***	***	***	***	0.199	0.216	0.207	0.251	0.208	2nd Max 3-Hour Mean
Allegheny County Air Basin											
PITTSBURGH	***	***	***	***	***	***	***	***	***	0.005	Annual Mean
D12	***	***	***	***	***	***	***	***	***	0.014	2nd Max 24-Hour Mean
	***	***	***	***	***	***	***	***	***	0.047	2nd Max 3-Hour Mean
DEP Region 5 Non-Air Basin											
FLORENCE	0.015	0.014	0.013	0.015	0.013	0.012	0.009	0.010	0.012	0.013	Annual Mean
504	0.067	0.057	0.047	0.059	0.058	0.086	0.034	0.035	0.050	0.043	2nd Max 24-Hour Mean
	0.191	0.152	0.116	0.131	0.156	0.152	0.095	0.084	0.127	0.102	2nd Max 3-Hour Mean
WASHINGTON	0.013	0.012	0.012	0.012	0.012	0.012	0.009	0.008	0.010	0.010	Annual Mean
508	0.067	0.044	0.044	0.050	0.054	0.043	0.045	0.030	0.047	0.040	2nd Max 24-Hour Mean
	0.109	0.104	0.106	0.109	0.134	0.122	0.093	0.094	0.086	0.073	2nd Max 3-Hour Mean
GREENSBURG	***	***	***	***	***	***	***	***	***	0.009	Annual Mean
513	***	***	***	***	***	***	***	***	***	0.033	2nd Max 24-Hour Mean
	***	***	***	***	***	***	***	***	***	0.066	2nd Max 3-Hour Mean
Upper Beaver Valley Air Basin											
NEW CASTLE	0.011	0.011	0.010	0.008	0.008	0.008	0.007	0.008	0.008	0.009	Annual Mean
B21	0.055	0.045	0.042	0.048	0.036	0.037	0.032	0.035	0.033	0.032	2nd Max 24-Hour Mean
	0.103	0.129	0.110	0.099	0.103	0.077	0.070	0.064	0.114	0.117	2nd Max 3-Hour Mean

*** Indicates less than 50 percent valid data for the year

SULFUR DIOXIDE
HISTORICAL TREND
(Units: parts per million)

STATION & CODE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Erie Air Basin											
ERIE	0.014	0.014	0.010	0.011	0.011	0.010	0.009	0.010	0.009	0.010	Annual Mean
E10	0.074	0.057	0.044	0.056	0.072	0.076	0.050	0.066	0.035	0.068	2nd Max 24-Hour Mean
	0.137	0.161	0.114	0.137	0.190	0.155	0.112	0.173	0.097	0.138	2nd Max 3-Hour Mean
Shenango Valley Non-Air Basin											
FARRELL	0.011	0.010	0.008	0.008	0.008	0.008	0.008	0.007	0.007	0.008	Annual Mean
606	0.043	0.036	0.032	0.030	0.029	0.047	0.032	0.029	0.032	0.029	2nd Max 24-Hour Mean
	0.088	0.120	0.082	0.074	0.085	0.086	0.064	0.060	0.074	0.063	2nd Max 3-Hour Mean
DEP Region 6 Non-Air Basin											
WARREN	***	***	***	***	***	***	***	0.008	0.009	0.008	Annual Mean
611	***	***	***	***	***	***	***	0.028	0.038	0.028	2nd Max 24-Hour Mean
	***	***	***	***	***	***	***	0.096	0.083	0.103	2nd Max 3-Hour Mean
WARREN	***	***	***	***	***	***	***	***	0.015	0.016	Annual Mean
612	***	***	***	***	***	***	***	***	0.069	0.098	2nd Max 24-Hour Mean
	***	***	***	***	***	***	***	***	0.291	0.248	2nd Max 3-Hour Mean

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

											Number of 1 Hour Values In Ranges							
	PA	Percent	Number	1st Daily Max		2nd Daily Max		3nd Daily Max		4th Daily Max		.05	.09	.13	.17	.21	.25	
	Site	Valid	Daily 1 HR	1 HR	Date	1 HR	Date	1 HR	Date	1 HR	Date	to	to	to	to	to	to	>
Site Name	Code	Data	>= 0.125	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD/HH	.04	.08	.12	.16	.20	.24	.28	.28
Southeast Pennsylvania Air Basin																			
Bristol	P01	99.3	0	0.117	09/06/14	0.115	07/19/13	0.111	05/16/15	0.110	08/24/12	62	111	41	0	0	0	0	0
Chester	P11	98.3	2	0.132	06/21/12	0.125	08/22/13	0.120	06/26/12	0.119	06/25/17	46	125	39	2	0	0	0	0
Norristown	P21	99.0	2	0.129	08/22/16	0.126	06/25/19	0.120	09/06/17	0.118	06/21/12	45	120	45	2	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																			
Allentown	A19	98.8	0	0.110	07/04/13	0.106	06/25/17	0.106	07/28/17	0.105	05/29/13	60	114	38	0	0	0	0	0
Freemansburg	A25	99.2	0	0.107	07/04/12	0.104	05/29/13	0.102	05/16/18	0.102	06/25/17	66	136	11	0	0	0	0	0
Easton	A41	99.4	0	0.124	05/16/18	0.111	08/04/17	0.110	07/04/13	0.109	08/05/14	79	110	24	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																			
Scranton	S01	97.7	0	0.117	08/05/14	0.108	09/14/15	0.105	09/06/15	0.099	05/16/21	65	117	20	0	0	0	0	0
Nanticoke	S26	99.2	0	0.113	08/05/14	0.098	09/06/15	0.098	09/14/14	0.094	05/29/12	76	125	12	0	0	0	0	0
Wilkes-Barre	S28	98.9	0	0.110	08/05/14	0.102	09/14/14	0.099	05/16/20	0.098	09/06/16	61	131	20	0	0	0	0	0
Peckville	S29	99.4	0	0.108	08/05/14	0.105	09/14/13	0.102	05/16/21	0.102	09/06/15	68	127	19	0	0	0	0	0
Reading Air Basin																			
Reading	R01	98.6	0	0.117	06/25/16	0.106	07/28/15	0.105	05/29/17	0.103	07/04/13	64	109	35	0	0	0	0	0
Harrisburg Air Basin																			
Harrisburg	H11	98.1	0	0.120	09/13/15	0.116	09/14/16	0.109	05/16/15	0.109	09/12/14	48	123	39	0	0	0	0	0
Lancaster Air Basin																			
Lancaster	L01	99.4	0	0.121	09/12/16	0.119	06/25/13	0.118	09/14/14	0.115	07/03/16	45	126	41	0	0	0	0	0

**** Primary Daily 1 Hour Air Quality Standard of 0.12 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

Site Name	PA Site Code	Percent Valid Data	Number Daily 1 HR >= 0.125	1st Daily Max 1 HR Mean	1st Daily Max Date MM/DD/HH	2nd Daily Max 1 HR Mean	2nd Daily Max Date MM/DD/HH	3nd Daily Max 1 HR Mean	3nd Daily Max Date MM/DD/HH	4th Daily Max 1 HR Mean	4th Daily Max Date MM/DD/HH	Number of 1 Hour Values In Ranges .00 to .04	.05 to .08	.09 to .12	.13 to .16	.17 to .20	.21 to .24	.25 to .28	> .28
York Air Basin																			
York	Y01	99.3	0	0.121	09/14/15	0.112	09/12/15	0.108	07/14/17	0.105	07/19/14	58	125	31	0	0	0	0	0
DEP Region 3 Non-Air Basin																			
Perry County	305	96.4	0	0.124	09/14/15	0.110	09/15/15	0.102	09/06/14	0.101	06/25/15	45	146	18	0	0	0	0	0
Hershey	306	99.5	0	0.114	05/16/15	0.111	09/14/15	0.103	07/16/14	0.100	06/25/12	61	125	28	0	0	0	0	0
Kutztown	310	97.9	0	0.106	06/25/16	0.104	05/17/13	0.102	07/04/12	0.102	09/14/15	52	125	32	0	0	0	0	0
Methodist Hill	313	99.1	0	0.123	09/14/20	0.120	06/25/16	0.115	09/15/15	0.110	07/04/05	29	146	37	0	0	0	0	0
Altoona Non-Air Basin																			
Altoona East	308	98.8	0	0.117	07/03/16	0.114	05/16/12	0.113	05/19/16	0.111	06/25/16	44	148	19	0	0	0	0	0
Williamsport Non-Air Basin																			
Williamsport	407	99.0	0	0.101	08/05/13	0.097	09/06/13	0.086	05/19/13	0.083	05/29/11	95	114	3	0	0	0	0	0
Johnstown Air Basin																			
Johnstown	J01	99.4	1	0.131	07/03/17	0.124	05/16/13	0.112	07/14/18	0.111	08/23/15	54	132	26	1	0	0	0	0
Monongahela Valley Air Basin																			
Charleroi	M01	98.2	3	0.130	08/07/14	0.127	09/12/15	0.126	08/06/16	0.123	07/14/15	29	122	55	3	0	0	0	0
Lower Beaver Valley Air Basin																			
Beaver Falls	B11	98.7	0	0.121	05/15/15	0.116	05/19/17	0.113	08/07/14	0.113	09/14/14	55	130	26	0	0	0	0	0
Hookstown	B23	93.4	0	0.115	08/04/15	0.113	05/15/16	0.111	07/13/16	0.106	08/16/16	37	139	23	0	0	0	0	0
Brighton Township	B27	98.6	0	0.115	05/15/14	0.113	05/19/16	0.101	08/07/13	0.101	09/06/16	54	130	28	0	0	0	0	0

**** Primary Daily 1 Hour Air Quality Standard of 0.12 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

												Number of 1 Hour Values In Ranges							
	PA	Percent	Number	1st Daily Max		2nd Daily Max		3nd Daily Max		4th Daily Max		.00	.05	.09	.13	.17	.21	.25	
	Site	Valid	Daily 1 HR	1 HR	Date	1 HR	Date	1 HR	Date	1 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	>= 0.125	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD/HH	.04	.08	.12	.16	.20	.24	.28	.28
Allegheny County Air Basin																			
Pittsburgh	D12	95.1	0	0.112	05/15/15	0.105	08/05/13	0.105	08/07/12	0.103	08/06/13	93	92	16	0	0	0	0	0
DEP Region 5 Non-Air Basin																			
Florence	504	97.2	0	0.114	08/16/15	0.109	08/05/16	0.109	09/14/15	0.104	05/19/16	45	135	25	0	0	0	0	0
Washington	508	98.8	0	0.115	08/07/17	0.112	05/15/17	0.111	08/05/16	0.107	05/19/17	51	134	28	0	0	0	0	0
Murrysville	510	99.3	0	0.103	08/06/15	0.101	08/07/14	0.097	09/13/14	0.096	08/05/16	86	116	10	0	0	0	0	0
Kittanning	512	99.2	0	0.113	05/16/12	0.113	05/19/15	0.113	08/06/13	0.110	08/05/16	50	120	39	0	0	0	0	0
Upper Beaver Valley Air Basin																			
New Castle	B21	98.6	0	0.110	05/15/17	0.096	05/19/16	0.094	08/07/17	0.086	09/13/16	78	127	4	0	0	0	0	0
Erie Air Basin																			
Erie	E10	92.7	1	0.130	09/14/15	0.122	05/19/15	0.113	09/06/16	0.111	07/03/17	37	126	33	1	0	0	0	0
Shenango Valley Non-Air Basin																			
Farrell	606	98.9	1	0.129	08/04/15	0.121	09/14/13	0.118	08/03/16	0.117	08/07/14	39	135	37	1	0	0	0	0
Special Purpose Monitoring Sites																			
Kunkletown	212	88.8	0	0.116	05/16/19	0.108	08/05/17	0.103	06/25/16	0.099	05/29/14	47	118	25	0	0	0	0	0
Holbrook	514	60.8	0	0.111	09/13/19	0.110	08/05/17	0.108	09/12/17	0.107	08/07/15	22	78	30	0	0	0	0	0
Moshannon	D09	83.9	1	0.132	05/16/14	0.116	05/28/18	0.113	06/25/18	0.110	05/19/15	11	138	31	1	0	0	0	0
Tiadaghton	D10	82.3	0	0.102	09/14/16	0.099	08/05/12	0.095	05/19/17	0.093	09/06/14	40	130	7	0	0	0	0	0
Penn Nursery	D11	99.7	0	0.113	05/19/13	0.113	05/25/06	0.103	08/05/12	0.103	08/21/14	48	150	16	0	0	0	0	0

**** Primary Daily 1 Hour Air Quality Standard of 0.12 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

Site Name	PA Site Code	Number of Valid Days	Number Daily 8 HR >= 0.085	1st Daily Max 8 HR Mean	1st Daily Max Date MM/DD/HH	2nd Daily Max 8 HR Mean	2nd Daily Max Date MM/DD/HH	3nd Daily Max 8 HR Mean	3nd Daily Max Date MM/DD/HH	4th Daily Max 8 HR Mean	4th Daily Max Date MM/DD/HH
Southeast Pennsylvania Air Basin											
Bristol	P01	214	17	0.100	09/06/12	0.097	05/16/11	0.096	08/24/10	0.096	08/22/11
Chester	P11	211	17	0.107	08/22/11	0.104	05/16/11	0.102	06/21/09	0.099	06/25/11
Norristown	P21	212	17	0.109	08/22/11	0.106	06/25/14	0.104	06/21/09	0.103	05/16/11
Allentown-Bethlehem-Easton Air Basin											
Allentown	A19	211	17	0.098	05/29/10	0.095	06/25/12	0.095	05/16/12	0.095	07/04/10
Freemansburg	A25	212	5	0.096	05/29/10	0.095	06/25/12	0.093	07/04/10	0.087	05/16/12
Easton	A41	212	8	0.099	05/16/12	0.092	05/29/10	0.089	07/04/11	0.089	08/24/10
Scranton-Wilkes-Barre Air Basin											
Scranton	S01	201	6	0.097	09/14/10	0.092	09/06/11	0.092	08/05/11	0.088	07/15/10
Nanticoke	S26	212	2	0.092	08/05/11	0.085	09/14/10	0.084	05/29/09	0.081	06/02/13
Wilkes-Barre	S28	210	7	0.093	09/14/10	0.090	08/05/11	0.088	09/06/11	0.088	07/15/09
Peckville	S29	213	5	0.097	09/14/11	0.090	07/15/10	0.089	08/05/10	0.089	09/06/11
Reading Air Basin											
Reading	R01	207	16	0.101	06/25/11	0.096	05/29/10	0.093	08/24/10	0.092	05/28/11
Harrisburg Air Basin											
Harrisburg	H11	209	22	0.107	09/13/11	0.105	09/14/11	0.098	09/12/11	0.097	09/06/11
Lancaster Air Basin											
Lancaster	L01	212	27	0.107	09/12/11	0.102	06/25/10	0.101	07/03/11	0.101	09/14/12

**** Primary 8 Hour Air Quality Standard of 0.08 parts per million for 4th daily maximum averaged over 3 years ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

Site Name	PA Site Code	Number of Valid Days	Number Daily 8 HR >= 0.085	1st Daily Max 8 HR Mean	1st Daily Max Date MM/DD/HH	2nd Daily Max 8 HR Mean	2nd Daily Max Date MM/DD/HH	3nd Daily Max 8 HR Mean	3nd Daily Max Date MM/DD/HH	4th Daily Max 8 HR Mean	4th Daily Max Date MM/DD/HH
York Air Basin											
York	Y01	213	18	0.102	09/14/11	0.098	09/12/10	0.096	09/13/10	0.092	07/04/10
DEP Region 3 Non-Air Basin											
Perry County	305	199	8	0.097	09/14/10	0.092	09/12/09	0.092	06/25/11	0.091	09/15/10
Hershey	306	213	9	0.098	09/14/12	0.097	05/16/11	0.091	05/19/11	0.088	09/12/11
Kutztown	310	209	14	0.093	05/17/10	0.092	06/25/11	0.091	05/16/12	0.090	07/28/11
Methodist Hill	313	210	22	0.108	09/14/13	0.106	09/15/13	0.105	07/04/04	0.104	06/25/12
Altoona Non-Air Basin											
Altoona East	308	211	17	0.100	07/03/11	0.099	05/16/10	0.098	05/19/11	0.097	06/25/11
Williamsport Non-Air Basin											
Williamsport	407	211	1	0.086	08/05/11	0.080	09/06/11	0.077	09/12/11	0.073	05/16/11
Johnstown Air Basin											
Johnstown	J01	213	13	0.105	07/03/12	0.103	08/05/11	0.101	08/23/11	0.098	05/16/09
Monongahela Valley Air Basin											
Charleroi	M01	208	33	0.116	09/12/11	0.112	08/06/10	0.110	07/03/11	0.108	08/07/11
Lower Beaver Valley Air Basin											
Beaver Falls	B11	211	10	0.106	05/15/11	0.105	05/19/10	0.098	08/07/12	0.098	09/14/09
Hookstown	B23	197	11	0.110	05/15/15	0.098	08/04/14	0.096	05/19/10	0.095	08/07/12
Brighton Township	B27	211	14	0.106	05/15/13	0.099	05/19/10	0.096	09/14/11	0.091	08/03/13

**** Primary 8 Hour Air Quality Standard of 0.08 parts per million for 4th daily maximum averaged over 3 years ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OZONE SUMMARY

(Units: parts per million)

YEAR: 1998 (APRIL-OCTOBER)

Site Name	PA Site Code	Number of Valid Days	Number Daily 8 HR >= 0.085	1st Daily Max 8 HR Mean	1st Daily Max Date MM/DD/HH	2nd Daily Max 8 HR Mean	2nd Daily Max Date MM/DD/HH	3nd Daily Max 8 HR Mean	3nd Daily Max Date MM/DD/HH	4th Daily Max 8 HR Mean	4th Daily Max Date MM/DD/HH
Allegheny County Air Basin											
Pittsburgh	D12	198	6	0.100	08/06/12	0.097	08/07/11	0.092	08/05/11	0.090	05/15/11
DEP Region 5 Non-Air Basin											
Florence	504	205	11	0.099	05/19/11	0.098	08/16/11	0.096	08/07/11	0.094	08/05/12
Washington	508	211	14	0.099	08/05/11	0.095	08/07/11	0.095	05/19/11	0.094	05/15/11
Murrysville	510	212	3	0.089	08/06/09	0.088	08/05/10	0.086	08/07/11	0.082	08/23/11
Kittanning	512	209	21	0.103	05/19/11	0.103	08/05/11	0.102	08/06/10	0.100	06/25/11
Upper Beaver Valley Air Basin											
New Castle	B21	208	2	0.094	05/15/11	0.090	05/19/10	0.077	05/28/11	0.077	08/07/13
Erie Air Basin											
Erie	E10	195	12	0.115	09/14/10	0.114	05/19/11	0.100	09/06/12	0.098	07/03/12
Shenango Valley Non-Air Basin											
Farrell	606	212	24	0.113	08/04/12	0.109	08/06/12	0.109	08/07/12	0.106	08/03/11
Special Purpose Monitoring Sites											
Kunkletown	212	189	14	0.095	08/05/10	0.095	05/16/13	0.094	06/25/13	0.091	07/28/14
Holbrook	514	124	16	0.107	09/13/13	0.105	08/05/14	0.105	09/12/13	0.100	09/14/11
Moshannon	D09	180	16	0.117	05/16/11	0.106	05/19/13	0.103	05/28/14	0.101	06/25/14
Tiadaghton	D10	173	3	0.095	08/05/11	0.089	05/19/12	0.087	09/14/12	0.084	09/04/12
Penn Nursery	D11	213	8	0.103	05/19/13	0.093	06/25/12	0.093	08/05/10	0.092	05/16/10

**** Primary 8 Hour Air Quality Standard of 0.08 parts per million for 4th daily maximum averaged over 3 years ****

OZONE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Southeast Pennsylvania Air Basin											
BRISTOL	0.135	0.132	0.138	0.117	0.129	0.128	0.137	0.120	0.119	0.115	2nd Max Daily 1 Hour Average
P01	5	4	9	0	2	2	5	1	1	0	Number Standard Exceedances
CHESTER	0.126	0.138	0.125	0.109	0.123	0.118	0.126	0.117	0.127	0.125	2nd Max Daily 1 Hour Average
P11	2	2	3	0	1	1	2	0	3	2	Number Standard Exceedances
NORRISTOWN	0.121	0.116	0.125	0.114	0.130	0.115	0.114	0.118	0.131	0.126	2nd Max Daily 1 Hour Average
P21	0	1	2	1	3	0	1	0	2	2	Number Standard Exceedances
Allentown-Bethlehem-Easton Air Basin											
ALLENTOWN	0.102	0.109	0.118	0.095	0.104	0.105	0.109	0.114	0.116	0.106	2nd Max Daily 1 Hour Average
A19	0	0	1	0	0	0	0	0	1	0	Number Standard Exceedances
FREEMANSBURG	***	***	***	***	***	***	***	***	***	0.104	2nd Max Daily 1 Hour Average
A25	***	***	***	***	***	***	***	***	***	0	Number Standard Exceedances
EASTON	0.098	0.111	0.120	0.096	0.110	0.105	0.108	0.099	0.116	0.111	2nd Max Daily 1 Hour Average
A41	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
Scranton-Wilkes Barre Air Basin											
SCRANTON	0.105	0.100	0.126	0.096	0.111	0.106	0.105	0.108	0.095	0.108	2nd Max Daily 1 Hour Average
S01	0	0	2	0	0	0	0	0	0	0	Number Standard Exceedances
NANTICOKE	0.085	0.088	0.108	0.094	0.105	0.083	0.100	0.087	0.091	0.098	2nd Max Daily 1 Hour Average
S26	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
WILKES BARRE	0.097	0.114	0.114	0.097	0.112	0.100	0.105	0.105	0.111	0.102	2nd Max Daily 1 Hour Average
S28	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
PECKVILLE	***	***	0.123	0.093	0.111	0.102	0.110	0.113	0.106	0.105	2nd Max Daily 1 Hour Average
S29	***	***	1	0	0	0	0	0	0	0	Number Standard Exceedances
Reading Air Basin											
READING	0.106	0.113	0.123	0.098	0.105	0.102	0.116	0.110	0.120	0.106	2nd Max Daily 1 Hour Average
R01	0	0	1	0	0	1	0	0	1	0	Number Standard Exceedances

*** Indicates less than 50 percent valid data for year

OZONE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Harrisburg Air Basin											
HARRISBURG	0.102	0.108	0.110	0.094	0.118	0.118	0.099	0.096	0.112	0.116	2nd Max Daily 1 Hour Average
H11	0	1	0	0	0	0	0	0	0	0	Number Standard Exceedances
Lancaster Air Basin											
LANCASTER	0.101	0.101	0.119	0.106	0.118	0.111	0.124	0.101	0.133	0.119	2nd Max Daily 1 Hour Average
L01	0	0	0	0	1	0	1	0	3	0	Number Standard Exceedances
York Air Basin											
YORK	0.102	0.121	0.114	0.101	0.112	0.115	0.097	0.098	0.109	0.112	2nd Max Daily 1 Hour Average
Y01	0	1	0	0	0	0	0	0	0	0	Number Standard Exceedances
DEP Region 3 Non-Air Basin											
PERRY COUNTY	0.096	0.100	0.103	0.088	0.110	0.106	0.103	0.090	0.103	0.110	2nd Max Daily 1 Hour Average
305	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
HERSHEY	0.113	0.122	0.113	0.097	0.110	0.122	0.113	0.104	0.116	0.111	2nd Max Daily 1 Hour Average
306	0	1	0	0	0	0	0	0	0	0	Number Standard Exceedances
KUTZTOWN	0.105	0.108	0.119	0.100	0.110	0.106	0.107	0.100	0.109	0.104	2nd Max Daily 1 Hour Average
310	0	0	1	0	0	1	0	0	0	0	Number Standard Exceedances
METHODIST HILL	***	***	***	***	***	***	***	0.096	0.114	0.120	2nd Max Daily 1 Hour Average
313	***	***	***	***	***	***	***	0	0	0	Number Standard Exceedances
Altoona Non-Air Basin											
ALTOONA	0.099	0.097	0.106	0.095	0.100	0.106	0.112	0.101	0.114	0.114	2nd Max Daily 1 Hour Average
308	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
Williamsport Non-Air Basin											
WILLIAMSPORT	0.080	0.088	0.101	0.092	0.088	0.079	0.091	0.082	0.086	0.097	2nd Max Daily 1 Hour Average
407	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances

*** Indicates less than 50 percent valid data for year

OZONE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Johnstown Air Basin											
JOHNSTOWN	0.098	0.103	0.113	0.089	0.099	0.094	0.101	0.098	0.104	0.124	2nd Max Daily 1 Hour Average
J01	0	0	0	0	0	0	0	0	1	1	Number Standard Exceedances
Monongahela Valley Air Basin											
CHARLEROI	0.102	0.102	0.119	0.085	0.115	0.112	0.116	0.102	0.118	0.127	2nd Max Daily 1 Hour Average
M01	0	0	0	0	0	0	0	0	0	3	Number Standard Exceedances
Lower Beaver Valley Air Basin											
BEAVER FALLS	0.104	0.104	0.108	0.101	0.099	0.107	0.106	0.105	0.101	0.116	2nd Max Daily 1 Hour Average
B11	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
HOOKSTOWN	***	***	***	***	***	***	0.102	0.104	0.098	0.113	2nd Max Daily 1 Hour Average
B23	***	***	***	***	***	***	0	0	0	0	Number Standard Exceedances
BRIGHTON TWP	***	***	***	***	***	0.104	0.098	0.099	0.096	0.113	2nd Max Daily 1 Hour Average
B27	***	***	***	***	***	0	0	0	0	0	Number Standard Exceedances
Allegheny County Air Basin											
PITTSBURGH	***	***	***	***	***	***	***	***	***	0.105	2nd Max Daily 1 Hour Average
D12	***	***	***	***	***	***	***	***	***	0	Number Standard Exceedances
DEP Region 5 Non-Air Basin											
FLORENCE	***	***	***	***	***	***	0.104	0.092	0.111	0.109	2nd Max Daily 1 Hour Average
504	***	***	***	***	***	***	0	0	0	0	Number Standard Exceedances
WASHINGTON	0.104	0.104	0.106	0.092	0.104	0.115	0.111	0.103	0.107	0.112	2nd Max Daily 1 Hour Average
508	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
MURRYSVILLE	0.081	0.103	0.105	0.073	0.120	0.118	0.127	0.104	0.123	0.101	2nd Max Daily 1 Hour Average
510	0	0	0	0	0	0	3	0	1	0	Number Standard Exceedances
KITTANNING	***	***	***	***	***	***	***	***	***	0.113	2nd Max Daily 1 Hour Average
512	***	***	***	***	***	***	***	***	***	0	Number Standard Exceedances
GREENSBURG	***	***	***	***	***	***	***	***	***	***	2nd Max Daily 1 Hour Average
513	***	***	***	***	***	***	***	***	***	***	Number Standard Exceedances

*** Indicates less than 50 percent valid data for year

OZONE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Upper Beaver Valley Air Basin											
NEW CASTLE	0.101	0.097	0.101	0.094	0.095	0.102	0.101	0.097	0.109	0.096	2nd Max Daily 1 Hour Average
B21	0	0	0	0	0	0	0	0	0	0	Number Standard Exceedances
Erie Air Basin											
ERIE	0.116	0.100	0.113	0.098	0.107	0.101	0.105	0.100	0.103	0.122	2nd Max Daily 1 Hour Average
E10	0	0	0	0	0	0	0	0	0	1	Number Standard Exceedances
Shenango Valley Non-Air Basin											
FARRELL	0.105	0.103	0.107	0.100	0.105	0.111	0.113	0.103	0.111	0.121	2nd Max Daily 1 Hour Average
606	0	0	0	0	0	0	0	0	0	1	Number Standard Exceedances

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

NITROGEN DIOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

								Daily Means				Number of 1 Hour Values In Ranges							
	PA	Percent		1st Max		2nd Max		1st Max		2nd Max		0.00	0.05	0.09	0.13	0.17	0.21	0.25	
	Site	Valid	Annual	1 HR	Date	1 HR	Date	24 HR	Date	24 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	Mean	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD	Mean	MM/DD	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.28
Southeast Pennsylvania Air Basin																			
Bristol	P01	98.9	0.018	0.094	02/10/08	0.077	02/10/07	0.052	02/10	0.042	12/26	8527	140	1	0	0	0	0	0
Chester	P11	96.1	0.019	0.075	03/20/12	0.071	03/30/11	0.040	12/03	0.039	02/09	8545	175	0	0	0	0	0	0
Norristown	P21	99.0	0.019	0.078	05/15/20	0.077	05/15/19	0.043	02/10	0.039	09/25	8421	253	0	0	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																			
Allentown	A19	98.5	0.016	0.061	02/10/11	0.058	02/10/12	0.043	02/10	0.036	02/11	8576	56	0	0	0	0	0	0
Freemansburg	A25	98.3	0.017	0.054	04/13/20	0.053	12/03/18	0.036	02/10	0.036	12/03	8565	46	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																			
Scranton	S01	97.4	0.016	0.062	03/27/20	0.062	07/13/23	0.039	02/10	0.038	01/03	8447	84	0	0	0	0	0	0
Wilkes-Barre	S28	98.8	0.015	0.070	05/30/08	0.049	03/27/19	0.034	01/02	0.032	02/10	8643	12	0	0	0	0	0	0
Reading Air Basin																			
Reading	R01	98.4	0.021	0.074	05/15/19	0.070	09/12/19	0.039	02/10	0.037	01/03	8463	158	0	0	0	0	0	0
Harrisburg Air Basin																			
Harrisburg	H11	98.1	0.019	0.068	03/30/09	0.063	03/30/08	0.040	02/10	0.037	04/08	8404	186	0	0	0	0	0	0
Lancaster Air Basin																			
Lancaster	L01	97.0	0.015	0.054	05/15/21	0.052	04/07/21	0.033	02/27	0.031	02/09	8469	29	0	0	0	0	0	0
York Air Basin																			
York	Y01	97.6	0.019	0.068	05/20/05	0.066	05/20/04	0.038	02/10	0.036	12/16	8425	127	0	0	0	0	0	0
DEP Region 3 Non-Air Basin																			
Perry County	305	95.4	0.006	0.034	01/05/16	0.034	01/22/20	0.023	01/15	0.022	01/27	8355	0	0	0	0	0	0	0
Altoona Non-Air Basin																			
Altoona East	308	97.5	0.013	0.064	02/10/02	0.059	02/10/01	0.046	02/10	0.041	02/09	8503	34	0	0	0	0	0	0

**** Primary Annual Air Quality Standard of 0.053 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

NITROGEN DIOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

								Daily Means				Number of 1 Hour Values In Ranges							
	PA	Percent		1st Max		2nd Max		1st Max		2nd Max		0.00	0.05	0.09	0.13	0.17	0.21	0.25	
	Site	Valid	Annual	1 HR	Date	1 HR	Date	24 HR	Date	24 HR	Date	to	to	to	to	to	to	to	>
Site Name	Code	Data	Mean	Mean	MM/DD/HH	Mean	MM/DD/HH	Mean	MM/DD	Mean	MM/DD	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.28
Johnstown Air Basin																			
Johnstown	J01	98.4	0.015	0.056	03/26/19	0.051	03/27/19	0.035	02/07	0.033	02/10	8605	13	0	0	0	0	0	0
Monongahela Valley Air Basin																			
Charleroi	M01	97.3	0.016	0.063	07/14/21	0.057	09/14/20	0.034	03/18	0.033	02/09	8484	43	0	0	0	0	0	0
Lower Beaver Valley Air Basin																			
Beaver Falls	B11	98.5	0.019	0.070	02/10/10	0.059	02/10/09	0.040	02/10	0.034	10/27	8574	55	0	0	0	0	0	0
Allegheny County Air Basin																			
Pittsburgh	D12	97.6	0.021	0.088	09/14/18	0.088	09/14/19	0.053	09/14	0.043	05/15	8202	345	3	0	0	0	0	0
DEP Region 5 Non-Air Basin																			
Florence	504	21.2	0.011	0.043	10/27/17	0.039	10/27/18	0.026	12/16	0.022	10/27	1860	0	0	0	0	0	0	0
Washington	508	97.6	0.017	0.068	04/22/21	0.065	02/09/10	0.041	02/07	0.041	02/09	8437	116	0	0	0	0	0	0
Greensburg	513	95.7	0.018	0.065	03/27/20	0.061	05/15/20	0.032	02/10	0.032	10/27	8334	53	0	0	0	0	0	0
Upper Beaver Valley Air Basin																			
New Castle	B21	99.2	0.019	0.058	09/14/18	0.057	10/17/18	0.035	09/14	0.033	11/30	8626	61	0	0	0	0	0	0
Erie Air Basin																			
Erie	E10	96.4	0.014	0.066	05/27/20	0.061	05/14/20	0.044	02/10	0.032	10/27	8364	81	0	0	0	0	0	0
Special Purpose Monitoring Sites																			
Arendtsville	314	34.2	0.004	0.020	05/14/11	0.019	05/13/18	0.013	05/14	0.011	09/17	2997	0	0	0	0	0	0	0

**** Primary Annual Air Quality Standard of 0.053 parts per million ****

NITROGEN DIOXIDE HISTORICAL TREND
ANNUAL MEANS
(Units: parts per million)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Southeast Pennsylvania Air Basin											
BRISTOL	(P01)	0.024	0.022	0.022	0.021	0.019	0.023	0.020	0.021	0.020	0.018
CHESTER	(P11)	0.023	0.021	0.021	0.021	0.021	0.022	0.020	0.021	0.020	0.019
NORRISTOWN	(P21)	0.024	0.018	0.015	0.017	0.022	0.023	0.020	0.021	0.019	0.019
Allentown-Bethlehem-Easton Air Basin											
ALLENTOWN	(A19)	0.020	0.017	0.018	0.018	0.020	0.021	0.018	0.018	0.016	0.016
FREEMANSBURG	(A25)	***	***	***	***	***	***	***	***	***	0.017
Scranton-Wilkes Barre Air Basin											
SCRANTON	(S01)	0.021	0.020	0.018	0.017	0.018	0.020	0.018	0.018	0.018	0.016
WILKES BARRE	(S28)	0.016	0.016	0.017	0.016	0.018	0.016	0.014	0.018	0.015	0.015
Reading Air Basin											
READING	(R01)	0.023	0.022	0.022	0.020	0.021	0.023	0.021	0.022	0.021	0.021
Harrisburg Air Basin											
HARRISBURG	(H11)	0.022	0.020	0.020	0.018	0.015	0.022	0.020	0.021	0.019	0.019
Lancaster Air Basin											
LANCASTER	(L01)	0.018	0.017	0.018	0.015	0.015	0.019	0.016	0.017	0.016	0.015
York Air Basin											
YORK	(Y01)	0.022	0.022	0.021	0.020	0.022	0.024	0.021	0.021	0.019	0.019
DEP Region 3 Non-Air Basin											
PERRY COUNTY	(305)	0.007	0.007	0.008	0.007	0.008	0.008	0.007	0.009	0.007	0.006
Altoona Non-Air Basin											
ALTOONA	(308)	0.015	0.015	0.015	0.014	0.015	0.016	0.013	0.014	0.014	0.013
Johnstown Air Basin											
JOHNSTOWN	(J01)	0.019	0.018	0.019	0.018	0.017	0.018	0.015	0.018	0.016	0.015
Monongahela Valley Air Basin											
CHARLEROI	(M01)	0.020	0.018	0.019	0.018	0.018	0.018	0.017	0.017	0.016	0.016
Lower Beaver Valley Air Basin											
BEAVER FALLS	(B11)	0.020	0.020	0.019	0.020	0.020	0.020	0.018	0.018	0.017	0.019

*** Indicates less than 50 percent valid data for year

NITROGEN DIOXIDE HISTORICAL TREND
ANNUAL MEANS
(Units: parts per million)

STATION & SITE CODE		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Allegheny County Air Basin											
PITTSBURGH	(D12)	***	***	***	***	***	***	***	***	***	0.021
DEP Region 5 Non-Air Basin											
FLORENCE	(504)	***	***	***	***	***	***	***	***	***	***
WASHINGTON	(508)	0.021	0.018	0.019	0.019	0.019	0.019	0.016	0.015	0.018	0.017
GREENSBURG	(513)	***	***	***	***	***	***	***	***	***	0.018
Upper Beaver Valley Air Basin											
NEW CASTLE	(B21)	0.019	0.020	0.020	0.021	0.021	0.021	0.019	0.024	0.020	0.019
Erie Air Basin											
ERIE	(E10)	0.015	0.015	0.014	0.014	0.014	0.015	0.015	0.015	0.015	0.014

*** Indicates less than 50 percent valid data for year

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OXIDES OF NITROGEN SUMMARY

(Units: parts per million)

YEAR: 1998

Site Name	PA Site Code	Percent Valid Data	Annual Mean	1st Max 1 HR Mean	1st Max Date MM/DD/HH	2nd Max 1 HR Mean	2nd Max Date MM/DD/HH	Daily Means 1st Max 24 HR Mean	Daily Means 1st Max Date MM/DD	Daily Means 2nd Max 24 HR Mean	Daily Means 2nd Max Date MM/DD	Number of 1 Hour Values In Ranges 0.00 to 0.04	0.05 to 0.08	0.09 to 0.12	0.13 to 0.16	0.17 to 0.20	0.21 to 0.24	0.25 to 0.28	> 0.28
Southeast Pennsylvania Air Basin																			
Bristol	P01	98.9	0.041	0.770	02/10/07	0.687	02/10/08	0.283	02/10	0.249	12/16	6616	1091	374	214	114	79	49	129
Chester	P11	96.1	0.034	0.422	11/30/20	0.374	02/02/08	0.139	01/05	0.134	11/29	6428	1346	387	151	53	28	16	11
Norristown	P21	99.0	0.036	0.518	12/17/07	0.464	12/17/08	0.134	12/16	0.132	12/17	6554	1395	414	173	71	39	18	10
Allentown-Bethlehem-Easton Air Basin																			
Allentown	A19	98.5	0.024	0.286	02/02/08	0.254	02/10/08	0.108	01/06	0.105	02/10	7400	901	219	75	22	10	4	1
Freemansburg	A25	98.3	0.032	0.297	12/07/07	0.279	12/07/08	0.145	02/10	0.129	12/16	6708	1212	396	186	74	25	6	1
Scranton-Wilkes-Barre Air Basin																			
Scranton	S01	97.4	0.027	0.374	12/15/21	0.351	12/15/22	0.143	12/15	0.137	12/16	7052	988	312	127	34	9	5	2
Wilkes-Barre	S28	98.5	0.029	0.271	02/11/08	0.265	12/10/08	0.148	01/04	0.148	12/29	6940	989	390	212	54	43	4	0
Reading Air Basin																			
Reading	R01	98.4	0.046	0.627	12/04/07	0.541	12/03/08	0.216	01/03	0.201	01/06	5744	1788	622	227	99	67	22	52
Harrisburg Air Basin																			
Harrisburg	H11	98.0	0.035	0.399	02/10/08	0.386	02/10/05	0.167	02/10	0.163	12/16	6639	1140	447	192	86	45	17	22
Lancaster Air Basin																			
Lancaster	L01	97.0	0.028	0.336	12/03/09	0.322	12/03/08	0.152	12/16	0.118	02/10	7052	984	278	105	42	19	13	5
York Air Basin																			
York	Y01	97.9	0.037	0.415	12/16/08	0.392	01/29/06	0.173	12/16	0.139	02/10	6513	1245	442	188	94	51	23	16
DEP Region 3 Non-Air Basin																			
Perry County	305	95.4	0.009	0.119	11/13/09	0.103	11/13/10	0.041	01/06	0.038	12/29	8301	51	3	0	0	0	0	0

**** No Long- or Short-Term Air Quality Standards ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

OXIDES OF NITROGEN SUMMARY

(Units: parts per million)

YEAR: 1998

Site Name	PA Site Code	Percent Valid Data	Annual Mean	1st Max 1 HR Mean	1st Max Date MM/DD/HH	2nd Max 1 HR Mean	2nd Max Date MM/DD/HH	Daily Means 1st Max 24 HR Mean	Daily Means 1st Max Date MM/DD	Daily Means 2nd Max 24 HR Mean	Daily Means 2nd Max Date MM/DD	Number of 1 Hour Values In Ranges 0.00 to 0.04	0.05 to 0.08	0.09 to 0.12	0.13 to 0.16	0.17 to 0.20	0.21 to 0.24	0.25 to 0.28	> 0.28
Altoona Non-Air Basin																			
Altoona	308	97.4	0.021	0.254	02/10/08	0.211	12/28/10	0.112	02/10	0.093	01/07	7596	712	179	31	10	1	1	0
Johnstown Air Basin																			
Johnstown	J01	98.4	0.025	0.302	01/06/17	0.293	01/06/11	0.170	01/06	0.128	01/07	7496	848	197	47	11	12	4	3
Monongahela Valley Air Basin																			
Charleroi	M01	97.2	0.032	0.409	01/07/17	0.397	01/07/13	0.220	01/07	0.122	02/09	6676	1138	450	165	57	17	6	6
Lower Beaver Valley Air Basin																			
Beaver Falls	B11	98.5	0.035	0.301	01/07/15	0.300	01/05/09	0.156	01/05	0.137	12/16	6561	1334	441	183	71	28	8	3
Allegheny County Air Basin																			
Pittsburgh	D12	97.1	0.044	0.438	02/16/08	0.402	01/05/11	0.192	02/10	0.192	10/30	5967	1245	637	340	178	79	37	24
DEP Region 5 Non-Air Basin																			
Florence	504	21.2	0.014	0.073	12/16/11	0.071	10/26/11	0.042	12/16	0.034	12/13	1832	28	0	0	0	0	0	0
Washington	508	97.3	0.031	0.350	01/07/11	0.333	01/07/10	0.168	02/09	0.143	02/07	7085	922	275	125	72	33	8	7
Greenburg	513	95.8	0.033	0.308	11/13/21	0.267	11/13/20	0.124	12/14	0.104	10/30	6547	1408	259	103	43	21	7	1
Upper Beaver Valley Air Basin																			
New Castle	B21	99.2	0.037	0.540	01/05/17	0.467	01/05/18	0.164	01/05	0.129	12/15	6474	1566	412	144	60	16	8	7
Erie Air Basin																			
Erie	E10	95.4	0.023	0.346	02/10/07	0.313	01/28/07	0.164	02/10	0.118	02/09	7406	746	140	36	11	9	5	6
Special Purpose Monitoring Sites																			
Arendtsville	314	33.9	0.004	0.032	05/15/06	0.029	05/14/06	0.019	05/14	0.015	05/16	2972	0	0	0	0	0	0	0

**** No Long- or Short-Term Air Quality Standards ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

CARBON MONOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Number 1 HR > 35	1st Max 1 HR Mean	1st Max Date MM/DD/HH	2nd Max 1 HR Mean	2nd Max Date MM/DD/HH	Number 8 HR > 9	Running Averages 1st Max 8 HR Mean	1st Max Date MM/DD/HH	Running Averages 2nd Max 8 HR Mean	2nd Max Date MM/DD/HH	Number of 8 Hour Values In Ranges 0 to 4	5 to 8	9 to 12	13 to 16	17 to 20	21 to 24	25 to 28	> 28
Southeast Pennsylvania Air Basin																					
Bristol	P01	99.3	0.5	0	6.2	12/16/08	5.2	12/10/08	0	3.7	11/14/06	3.5	02/10/08	8706	0	0	0	0	0	0	0
Norristown	P21	99.3	0.5	0	3.0	12/17/07	2.9	12/02/07	0	1.8	12/17/11	1.8	04/29/02	8707	0	0	0	0	0	0	0
Allentown-Bethlehem-Easton Air Basin																					
Freemansburg	A25	99.3	0.5	0	3.6	12/07/07	3.4	02/11/07	0	2.5	12/01/03	2.4	02/10/08	8706	0	0	0	0	0	0	0
Allentown CBD	A51	97.2	0.5	0	5.6	01/04/19	5.0	11/06/05	0	2.9	01/04/23	2.9	02/10/12	8566	0	0	0	0	0	0	0
Scranton-Wilkes-Barre Air Basin																					
Scranton	S01	97.8	0.4	0	3.6	12/15/07	3.4	01/06/19	0	1.9	12/16/02	1.9	01/06/22	8530	0	0	0	0	0	0	0
Wilkes-Barre CBD	S27	99.1	0.5	0	7.9	01/02/17	7.0	12/07/08	0	3.7	01/06/23	3.1	01/02/20	8670	0	0	0	0	0	0	0
Reading Air Basin																					
Reading	R01	99.1	0.5	0	5.2	12/04/07	4.7	01/06/10	0	3.5	01/04/02	3.2	01/03/04	8702	0	0	0	0	0	0	0
Harrisburg Air Basin																					
Harrisburg CBD	H16	99.1	0.5	0	4.9	01/03/22	4.1	01/02/21	0	3.4	01/03/00	3.0	01/04/01	8673	0	0	0	0	0	0	0
Lancaster Air Basin																					
Lancaster	L01	99.4	0.4	0	3.4	02/02/07	3.4	02/10/07	0	1.9	02/10/10	1.9	01/26/11	8715	0	0	0	0	0	0	0
York Air Basin																					
York	Y01	99.4	0.5	0	5.5	01/29/06	5.0	12/16/08	0	2.7	12/16/11	2.4	02/10/10	8715	0	0	0	0	0	0	0
Altoona Non-Air Basin																					
Altoona	308	98.8	0.3	0	2.6	02/10/08	2.0	12/10/08	0	1.4	12/12/02	1.2	02/10/10	8665	0	0	0	0	0	0	0

**** Primary Air Quality Standards ****
**** 1 Hour Mean = 35 parts per million ****
**** 8 Hour Running Mean = 9 parts per million ****

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

CARBON MONOXIDE SUMMARY

(Units: parts per million)

YEAR: 1998

Site Name	PA Site Code	Percent Valid Data	Annual Mean	Number 1 HR > 35	1st Max 1 HR Mean	1st Max Date MM/DD/HH	2nd Max 1 HR Mean	2nd Max Date MM/DD/HH	Number 8 HR > 9	Running Averages 1st Max 8 HR Mean	1st Max Date MM/DD/HH	Running Averages 2nd Max 8 HR Mean	2nd Max Date MM/DD/HH	Number of 8 Hour Values In Ranges 0 to 4	5 to 8	9 to 12	13 to 16	17 to 20	21 to 24	25 to 28	> 28
Johnstown Air Basin																					
Johnstown	J01	99.1	0.5	0	4.3	01/06/17	4.2	01/06/18	0	3.7	01/06/23	3.1	01/08/00	8694	0	0	0	0	0	0	0
Monongahela Valley Air Basin																					
Charleroi	M01	98.3	0.3	0	3.7	01/07/18	3.0	01/07/17	0	2.4	01/07/20	1.9	01/08/01	8612	0	0	0	0	0	0	0
Lower Beaver Valley Air Basin																					
Beaver Falls	B11	99.2	0.4	0	2.2	01/07/15	2.2	01/07/16	0	1.5	02/10/12	1.5	01/13/00	8702	0	0	0	0	0	0	0
Allegheny County Air Basin																					
Pittsburgh	D12	98.8	0.6	0	3.8	01/05/11	3.5	01/05/12	0	2.9	01/05/14	2.7	02/10/02	8622	0	0	0	0	0	0	0
DEP Region 5 Non-Air Basin																					
Greensburg	513	95.5	0.4	0	3.3	12/27/18	3.3	01/05/18	0	2.3	12/12/00	2.3	12/15/00	8331	0	0	0	0	0	0	0
Upper Beaver Valley Air Basin																					
New Castle	B21	99.6	0.7	0	8.1	01/05/17	7.2	01/05/18	0	3.2	01/05/20	2.4	11/29/00	8741	0	0	0	0	0	0	0
Erie Air Basin																					
Erie CBD	E12	97.9	0.7	0	10.1	07/20/04	9.5	06/29/03	0	6.3	12/28/04	5.1	08/24/03	8555	11	0	0	0	0	0	0
Special Purpose Monitoring Sites																					
Kunkletown	212	53.2	0.4	0	1.2	05/25/08	1.2	05/17/07	0	1.0	05/25/14	1.0	05/17/10	4658	0	0	0	0	0	0	0
Arendtsville	314	47.0	0.3	0	0.7	10/03/17	0.7	10/11/18	0	0.6	10/14/06	0.1	10/06/11	4106	0	0	0	0	0	0	0
Holbrook	514	26.2	0.3	0	1.0	08/12/00	0.8	06/21/10	0	0.7	08/31/13	0.7	09/01/00	2267	0	0	0	0	0	0	0

**** Primary Air Quality Standards ****
**** 1 Hour Mean = 35 parts per million ****
**** 8 Hour Running Mean = 9 parts per million ****

CARBON MONOXIDE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Southeast Pennsylvania Air Basin											
BRISTOL	14.1	12.6	9.6	8.6	6.2	7.9	9.2	6.3	6.8	5.2	2nd Maximum 1 Hour Average
P01	7.0	5.4	6.1	5.7	4.0	5.2	5.0	4.7	3.8	3.5	2nd Maximum 8 Hour Average
NORRISTOWN	6.6	6.7	6.1	4.5	3.9	5.0	4.8	3.5	3.2	2.9	2nd Maximum 1 Hour Average
P21	4.0	4.7	3.8	3.1	2.8	3.9	4.1	2.9	2.2	1.8	2nd Maximum 8 Hour Average
Allentown-Bethlehem-Easton Air Basin											
FREEMANSBURG	***	***	***	***	***	***	***	***	***	3.4	2nd Maximum 1 Hour Average
A25	***	***	***	***	***	***	***	***	***	2.4	2nd Maximum 8 Hour Average
ALLENTOWN CBD	8.1	8.3	13.4	6.1	5.6	7.5	7.3	5.3	4.8	5.0	2nd Maximum 1 Hour Average
A51	4.7	5.8	6.5	3.9	3.5	4.7	4.8	3.2	2.7	2.9	2nd Maximum 8 Hour Average
Scranton-Wilkes Barre Air Basin											
SCRANTON	6.3	6.2	5.3	5.5	4.3	4.6	5.2	7.0	4.7	3.4	2nd Maximum 1 Hour Average
S01	3.4	3.7	3.5	3.1	2.8	2.8	2.6	3.5	2.8	1.9	2nd Maximum 8 Hour Average
WILKES BARRE CBD	7.5	8.0	13.7	7.0	3.7	6.9	5.7	7.4	4.6	7.0	2nd Maximum 1 Hour Average
S27	4.7	5.3	4.8	4.4	3.0	4.3	3.0	4.1	3.3	3.1	2nd Maximum 8 Hour Average
Reading Air Basin											
READING	6.2	***	***	***	***	***	***	***	***	4.7	2nd Maximum 1 Hour Average
R01	3.7	***	***	***	***	***	***	***	***	3.2	2nd Maximum 8 Hour Average
Harrisburg Air Basin											
HARRISBURG CBD	***	***	***	***	***	***	***	4.2	5.2	4.1	2nd Maximum 1 Hour Average
H16	***	***	***	***	***	***	***	2.5	3.3	3.0	2nd Maximum 8 Hour Average
Lancaster Air Basin											
LANCASTER	5.3	5.0	4.2	3.9	4.7	5.2	4.4	3.6	5.1	3.4	2nd Maximum 1 Hour Average
L01	4.1	3.4	2.6	2.6	3.0	3.8	2.4	2.6	3.3	1.9	2nd Maximum 8 Hour Average
York Air Basin											
YORK	12.1	9.6	7.2	6.8	5.4	6.3	5.5	5.0	5.7	5.0	2nd Maximum 1 Hour Average
Y01	4.6	4.4	3.7	3.6	3.3	3.9	2.7	2.8	3.4	2.4	2nd Maximum 8 Hour Average
Altoona Non-Air Basin											
ALTOONA	5.5	3.7	3.5	4.7	3.2	3.5	3.1	2.7	2.7	2.0	2nd Maximum 1 Hour Average

*** Indicates less than 50 percent valid data for year

CARBON MONOXIDE HISTORICAL TREND
(Units: parts per million)

STATION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	
308	3.2	2.6	1.7	2.8	2.0	2.4	1.7	1.9	1.5	1.2	2nd Maximum 8 Hour Average
Johnstown Air Basin											
JOHNSTOWN	6.2	5.9	8.4	8.5	5.8	5.4	5.4	7.0	4.7	4.2	2nd Maximum 1 Hour Average
J01	4.1	3.7	4.8	4.4	4.2	4.1	3.5	4.8	2.7	3.1	2nd Maximum 8 Hour Average
Monongahela Valley Air Basin											
CHARLEROI	3.0	3.9	4.0	3.1	2.4	3.5	3.5	2.8	1.8	3.0	2nd Maximum 1 Hour Average
M01	2.7	3.0	2.5	2.6	2.0	3.2	2.8	2.5	1.6	1.9	2nd Maximum 8 Hour Average
Lower Beaver Valley Air Basin											
BEAVER FALLS	4.2	5.0	4.8	3.4	2.7	3.4	3.2	3.2	2.6	2.2	2nd Maximum 1 Hour Average
B11	3.5	3.8	3.2	2.6	2.0	2.4	2.5	2.1	1.9	1.5	2nd Maximum 8 Hour Average
Allegheny County Air Basin											
PITTSBURGH	***	***	***	***	***	***	***	***	***	3.5	2nd Maximum 1 Hour Average
D12	***	***	***	***	***	***	***	***	***	2.7	2nd Maximum 8 Hour Average
DEP Region 5 Non-Air Basin											
GREENSBURG	***	***	***	***	***	***	***	***	***	3.3	2nd Maximum 1 Hour Average
513	***	***	***	***	***	***	***	***	***	2.3	2nd Maximum 8 Hour Average
Upper Beaver Valley Air Basin											
NEW CASTLE	7.3	7.0	8.2	7.6	5.9	6.7	6.1	6.5	4.6	7.2	2nd Maximum 1 Hour Average
B21	3.5	4.4	3.7	3.4	2.9	3.7	4.3	3.5	3.0	2.4	2nd Maximum 8 Hour Average
Erie Air Basin											
ERIE CBD	***	***	***	***	***	***	***	***	9.3	9.5	2nd Maximum 1 Hour Average
E12	***	***	***	***	***	***	***	***	4.9	5.1	2nd Maximum 8 Hour Average

*** Indicates less than 50 percent valid data for year

APPENDIX B

Air Pollution Control Agencies in Pennsylvania

Allegheny County Health Department
39th Street and Penn Avenue
Pittsburgh, PA 15201
(412) 578-8140

City of Philadelphia
Air Management Services
1501 East Lycoming Street
Philadelphia, PA 19124
(215) 685-1225

Commonwealth of Pennsylvania
Department of Environmental Protection
Bureau of Air Quality
Division of Air Quality Monitoring
Rachel Carson State Office Building 12th Floor
400 Market Street
P.O. Box 8468
Harrisburg, PA 17105-8468
(717) 787-6548

Related environmental information is available electronically via the Internet. Access the DEP website at www.dep.state.pa.us (choose Subjects / Air Quality).

APPENDIX C

Monitoring Sites and Addresses

SOUTHEAST PENNSYLVANIA AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
P01	BRISTOL	42-017-0012	BUCKS	Roosevelt Junior High School Rockview Lane	40 06 27 74 52 57
P11	CHESTER	42-045-0002	DELAWARE	Front & Norris Streets	39 50 08 75 22 22
P12	CONSHOHOCKEN	42-091-0112	MONTGOMERY	Bell Telephone Building 400 Fayette Street	40 04 37 75 18 15
P21	NORRISTOWN	42-091-0013	MONTGOMERY	State Armory 1046 Belvoir Road	40 06 45 75 18 34
P26	COATESVILLE	42-029-0116	CHESTER	Lukens Steel Research Building Modena Road & Penn Avenue	39 58 21 75 48 48

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
BUCKS	P01	X	X				X	X	X	X
DELAWARE	P11	X	X		X		X	X	X	
CHESTER	P26	X								
MONTGOMERY	P12		X	X	X	X				
	P21	X					X	X	X	X

ALLENTOWN - BETHLEHEM - EASTON AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
A19	ALLENTOWN	42-077-0004	LEHIGH	Allentown State Hospital Rear 1600 Hanover Avenue	40 36 43 75 25 58
A24	NAZARETH	42-095-0024	NORTHAMPTON	Holy Family School	40 44 35 75 19 15
A25	FREEMANSBURG	42-095-0025	NORTHAMPTON	Washington & Cambria Streets	40 37 41 75 20 28
A41	EASTON	42-095-0100	NORTHAMPTON	School District Warehouse Coal & Milton Streets	40 40 36 75 13 00
A51	ALLENTOWN	42-077-0100	LEHIGH	2 North Ninth Street Hamilton Street Side	40 35 57 75 28 28

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
NORTHAMPTON	A24	X	X							
	A25	X					X	X	X	X
	A41						X		X	
LEHIGH	A19	X					X	X	X	
	A51									X

SCRANTON - WILKES-BARRE AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
S01	SCRANTON	42-069-2006	LACKAWANNA	Behind Penn State Campus George Street	41 26 34 75 37 23
S04	PITTSTON	42-079-0204	LUZERNE	City Hall Broad Street	41 19 19 75 47 22
S07	WILKES-BARRE	42-079-1207	LUZERNE	Kirby Health Center 71 North Franklin Avenue	41 14 53 75 52 50
S15	SCRANTON	42-069-0208	LACKAWANNA	Jewish Community Center 601 Jefferson Avenue	41 24 43 75 39 21
S26	NANTICOKE	42-079-1100	LUZERNE	255 Lower Broadway	41 12 33 76 00 13
S27	WILKES-BARRE	42-079-2100	LUZERNE	North River Street	41 15 01 75 52 49
S28	WILKES-BARRE	42-079-1101	LUZERNE	Chilwick & Washington Streets	41 15 58 75 50 47
S29	PECKVILLE	42-069-0101	LACKAWANNA	Pleasant Avenue & Erie Street Wilson Fire Company No. 1	41 28 45 75 34 41

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
LACKAWANNA	S01	X					X	X	X	X
	S15	X								
	S29								X	
LUZERNE	S04	X								
	S07	X	X	X	X	X				
	S26								X	
	S27									X

	S28	X					X	X	X	

REGION II NON - AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
205	PALMERTON	42-025-0105	CARBON	New Jersey Zinc Research Bldg. Fourth Street & Franklin Avenue	40 48 12 75 36 31

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
CARBON	205		X	X	X	X				

READING AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
R01	READING	42-011-0009	BERKS	UGI Property 234 Morgantown Road	40 19 14 75 55 37
R09	TEMPLE	42-011-0716	BERKS	PennDOT Highway Garage 51 Water Street	40 24 12 75 55 43
R10	LAURELDALE	42-011-1717	BERKS	Muhlenberg Township Authority Spring Valley Road Substation	40 22 38 75 54 53
R15	READING	42-011-0015	BERKS	Northwest Junior High School North Front & West Spring Streets	40 21 04 75 56 08
R20	READING	42-011-0100	BERKS	700 Block of Penn Street Near Eighth Street	40 20 07 75 55 23

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
BERKS	R01	X					X	X	X	X
	R09	X								
	R10		X	X	X	X				
	R15	X								
	R20						X			

HARRISBURG AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
H06	HARRISBURG	42-043-0306	DAUPHIN	U.S. Post Office 812 Martin Luther King Blvd.	40 15 47 76 52 38
H11	HARRISBURG	42-043-0401	DAUPHIN	1833 UPS Drive	40 14 42 76 50 41
H15	LEMOYNE	42-041-0305	CUMBERLAND	Seventh and Walnut Streets FAA Enclosure	40 14 47 76 54 02
H16	HARRISBURG CBD	42-043-0102	DAUPHIN	PA Dept. of Agriculture Parking Lot 2301 North Cameron Street	40 17 09 76 52 53

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
CUMBERLAND	H15		X							
DAUPHIN	H06		X	X	X	X				
	H11	X					X	X	X	
	H16									X

LANCASTER AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
L01	LANCASTER	42-071-0007	LANCASTER	Lincoln Junior High School	40 02 49 76 17 00
L04	LANCASTER	42-071-0314	LANCASTER	Days Inn 30 Keller Avenue	40 03 22 76 18 26
L05	LANCASTER	42-071-0315	LANCASTER	Alumax Inc. Manheim Pike	40 04 22 76 20 08

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
LANCASTER	L01	X					X	X	X	X
	L04		X							
	L05	X	X	X	X	X				

YORK AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
Y01	YORK	42-133-0008	YORK	Davis Junior High School Hill Street	39 57 56 76 41 59
Y02	YORK	42-133-0322	YORK	J.E. Baker Company 232 East Market Street	39 57 49 76 43 21
Y07	YORK	42-133-0321	YORK	West York Borough Building 1700 Philadelphia Street	39 57 16 76 45 55

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
YORK	Y01	X					X	X	X	X
	Y02		X	X	X	X				
	Y07	X								

REGION III NON - AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
301	LYONS EAST	42-011-0717	BERKS	Near State & Kemp Streets	40 28 36 75 45 33
305	PERRY COUNTY	42-099-0301	PERRY	Little Buffalo State Park	40 27 26 77 09 57
306	HERSHEY	42-043-1100	DAUPHIN	Hershey Foods Technical Center Sipe Avenue & Mae Street	40 16 21 76 40 53
308	ALTOONA	42-013-0801	BLAIR	Ward Trucking Corporation Second Avenue & Seventh Street	40 32 07 78 22 15
310	KUTZTOWN	42-011-0001	BERKS	Kutztown State College Grim Science Building	40 30 40 75 47 11
313	METHODIST HILL	42-055-0001	FRANKLIN	Forest Road (High Elevation Site)	39 57 40 77 28 31
370	LYONS SOUTH	42-011-0003	BERKS	Heffner & Deka Roads	40 28 06 75 45 51

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
BERKS	301		X		X					
	310								X	
	370		X		X					
PERRY	305	X	X	X		X	X	X	X	
DAUPHIN	306								X	
FRANKLIN	313								X	

BLAIR	308	X	X	X		X	X	X	X	X

REGION IV NON - AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
407	WILLIAMSPORT	42-081-0403	LYCOMING	East Third & Railway Streets	41 14 46 76 59 24
408	STATE COLLEGE	42-027-0106	CENTRE	Municipal Parking Garage East Beaver Avenue & South Pugh	40 47 38 77 51 35

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
LYCOMING	407	X	X	X		X	X		X	
CENTRE	408		X	X		X				

JOHNSTOWN AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
J01	JOHNSTOWN	42-021-0011	CAMBRIA	Miller Auto Body Crafts Shop One Messenger Street	40 18 35 78 54 54
J08	EAST CONEMAUGH	42-021-0808	CAMBRIA	Recreation Field Citron Alley & First Street	40 20 53 78 52 58

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
CAMBRIA	J01	X					X	X	X	X
	J08		X	X	X	X				

MONONGAHELA VALLEY AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
M01	CHARLEROI	42-125-0005	WASHINGTON	Borough Waste Treatment Plant Front Street	40 08 48 79 54 08
M16	MONESSEN	42-129-0007	WESTMORELAND	Monessen Community Center 435 Donner Avenue	40 10 00 79 52 30

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
WASHINGTON	M01	X					X	X	X	X
WESTMORELAND	M16	X	X	X	X	X				

LOWER BEAVER VALLEY AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
B01	BADEN	42-007-0004	BEAVER	Route 65 & Holmes Avenue	40 38 08 80 13 51
B05	VANPORT	42-007-0505	BEAVER	Vanport Water Works Tamaqui Drive	40 41 05 80 19 30
B07	AMBRIDGE	42-007-0507	BEAVER	U.S. Post Office 1020 Merchant Street	40 35 30 80 13 40
B11	BEAVER FALLS	42-007-0014	BEAVER	Eighth Street & River Alley	40 44 52 80 19 00
B17	BADEN	42-007-0509	BEAVER	Baden Elementary School State Street & Harmony Road	40 37 48 80 13 32
B18	BEAVER FALLS	42-007-0518	BEAVER	Beaver Falls Middle School Eighth Avenue & Sixteenth Street	40 45 54 80 19 18
B23	HOOKSTOWN	42-007-0002	BEAVER	FAA Microwave Relay Tower	40 33 45 80 30 15
B27	BRIGHTON TOWNSHIP	42-007-0005	BEAVER	1015 Sebring Road	40 41 05 80 21 35

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
BEAVER	B01	X					X			
	B05		X		X					
	B07		X	X		X				
	B11	X					X	X	X	X
	B17	X								
	B18	X								
	B23						X		X	
	B27						X		X	

REGION V NON - AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
503	WASHINGTON	42-125-0103	WASHINGTON	Washington Post Office 153 Jefferson Avenue	40 10 19 80 15 09
504	FLORENCE	42-125-5001	WASHINGTON	Hillman State Park	40 26 44 80 25 16
508	WASHINGTON	42-125-0200	WASHINGTON	McCarrell & Fayette Streets	40 10 14 80 15 42
510	MURRYSVILLE	42-129-0006	WESTMORELAND	Murrysville Volunteer Fire Co. Old William Penn Hwy & Sardis Ave.	40 25 41 79 41 35
512	KITTANNING	42-005-0001	ARMSTRONG	Glade Drive & Nolte Road PA State Police Barracks	40 48 51 79 33 54
513	GREENSBURG	42-129-0008	WESTMORELAND	Donohue Road PA Dept. of Transportation Bldg.	40 18 17 79 30 20
D12	PITTSBURGH	42-003-0010	ALLEGHENY	Carnegie Science Center	40 26 44 80 00 59

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
WASHINGTON	503		X	X		X				
	504						X	X	X	
	508						X	X	X	
WESTMORELAND	510								X	
	513	X					X	X	X	X
ARMSTRONG	512								X	

ALLEGHENY	D12						X	X	X	X

UPPER BEAVER VALLEY AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
B16	ELLWOOD CITY	42-073-0016	LAWRENCE	Municipal Building 525 Lawrence Avenue	40 51 29 80 17 19
B21	NEW CASTLE	42-073-0015	LAWRENCE	Croton Avenue & Jefferson Street	40 59 45 80 20 48
B26	BESSEMER	42-073-0505	LAWRENCE	Mohawk Area School Mohawk School Road & Route 317	40 58 46 80 27 11

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
LAWRENCE	B16		X	X						
	B21	X					X	X	X	X
	B26	X								

ERIE AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
E07	ERIE	42-049-0602	ERIE	Erie School Administration Building 1511 Peach Street	42 07 14 80 04 50
E10	ERIE	42-049-0003	ERIE	East 10th & Marne Streets	42 08 30 80 02 19
E12	ERIE	42-049-0101	ERIE	West 12th & Myrtle Streets	42 07 14 80 05 21

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
ERIE	E07		X	X	X	X				
	E10	X					X	X	X	
	E12									X

REGION VI NON - AIR BASIN SITES

SITE LOCATIONS

PA SITE CODE	SITE NAME	EPA-AIRS SITE CODE	COUNTY	STREET ADDRESS	LATITUDE LONGITUDE
602	FARRELL	42-085-0622	MERCER	Municipal Building	41 12 44 80 30 08
606	FARRELL	42-085-0100	MERCER	Farrell High School Field New Castle Road & Mercer Avenue	41 12 54 80 29 06
611	WARREN	42-123-0003	WARREN	School District Building 345 East 5th Avenue	41 51 26 79 08 15
612	WARREN	42-123-0004	WARREN	Overlook Site near Stone Hill Road	41 50 41 79 10 11

PARAMETERS MONITORED

COUNTY	PA SITE CODE	PM-10	TSP	SULFATES	LEAD	NITRATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE
MERCER	602	X	X	X	X	X				
	606						X		X	
WARREN	611						X			
	612						X			