



2000 Air Quality Report

A summary of the New Jersey air quality data for 2000. Contains information on the Air Quality Index (AQI), concentrations of individual pollutants - sulfur dioxide, fine and inhalable particulates, carbon monoxide, ozone, nitrogen oxides, lead, sulfates and nitrates, smoke shade, and acid precipitation - and a monthly summary of meteorological information. A trend comparison with previous years is also provided. Newly included this year are data from the urban air toxics and photochemical assessment monitoring locations.

January, 2002

New Jersey Department of Environmental Protection
Bureau of Air Monitoring

2000 AIR QUALITY REPORT

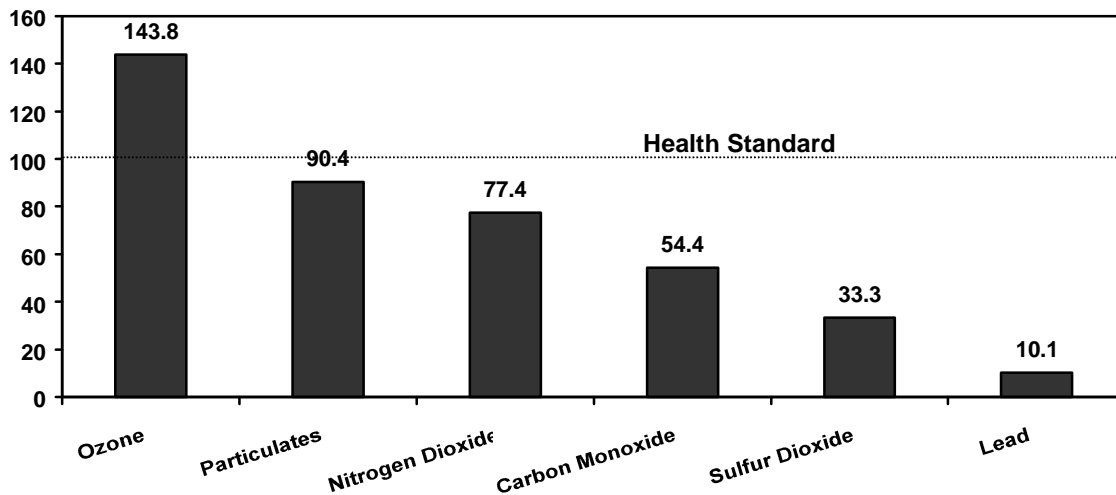
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2000 AIR QUALITY REPORT
EXECUTIVE SUMMARY

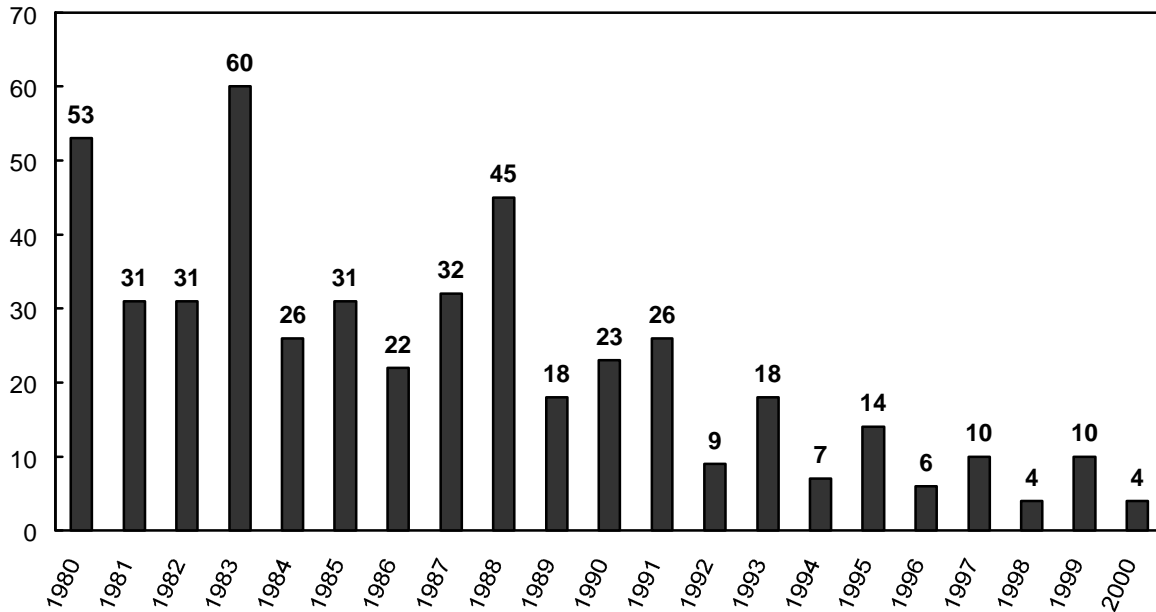
Based on indicators monitored by the Department of Environmental Protection, air quality in New Jersey has improved significantly since the passage of the original Clean Air Act in 1970. There are National Ambient Air Quality Standards (NAAQS) for six specific air pollutants ("criteria pollutants") and these are the indicators of overall air quality that are used. The NAAQS are based both on health effects (for the primary standards) and welfare effects (for the secondary standards). A bar chart comparing the maximum criteria pollutant concentrations recorded in 2000 with the health NAAQS can be seen below. In 2000, all pollutants except ozone were well within the standards. Even carbon monoxide, which was responsible for unhealthy air quality on 44 days as recently as 1984, has declined significantly in recent years and did not reach unhealthy levels in 2000.

**Maximum 2000 Pollutant Concentrations
as Percent of Federal Standards**



The 1-hour health standard for ozone was exceeded on only 4 days in 2000. In July, 1997 more stringent NAAQS for ozone and fine particulates were promulgated. Based on the new 8-hour ozone standard, New Jersey had 19 exceedance days as compared to 4 days with the old 1-hour standard. Initial sampling results for fine particulates indicate that some areas of the state would exceed those new standards, however, 3 years of sampling data are necessary to determine compliance with the standard. Ozone and particulates are New Jersey's two most pervasive air quality problems and more measures need to be taken to ensure that those health standards are attained in future years.

Number of Days the 1-Hour Ozone Health Standard Was Exceeded in New Jersey, 1980-2000



Pollutants other than the six criteria pollutants, and parameters such as meteorology and acid precipitation are also routinely monitored by the department. Acid precipitation remains a persistent environmental problem in New Jersey. Measured pH levels ten times more acidic than the naturally occurring pH of rainwater (5.0 to 5.6) are recorded regularly. The acidity of precipitation measured in New Jersey has improved since 1994 as a result of implementation of the first phase of acid rain controls required by the 1990 Clean Air Act Amendments. Summaries of the acid precipitation data as well as all other pollutant and weather data collected by the department are also contained in this report. New in this year's report are data from the Urban Air Toxics Monitoring Program (UATMP) sampling locations in Camden and Elizabeth and data from the Photochemical Assessment Monitoring Stations (PAMS) located at Camden, Rider University, and Rutgers University. Summaries of the data by year from 1975 to 2000 are reported in Appendix A, and Appendix B provides maps illustrating designated nonattainment areas within the state as defined by the U.S. Environmental Protection Agency in the Code of Federal Regulations (40 CFR Part 81). Nonattainment designations are based on evaluations of air monitoring data, emissions inventories, dispersion modeling and other analyses performed for specific "base year(s)". Thus they may not appear consistent with direct comparisons of the 2000 data to the air quality standards.

2000 AIR QUALITY REPORT

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Note: Supplementary Information Available:

1. Annual Quality Assurance Report - 2000
2. Annual Air Quality Brochure - 2001

The above supplementary information is available for public inspection.
Please contact Andy Mikula at 609-984-5512 to make arrangements.

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AIR QUALITY
MONITORING
REPORT
2000

MONITORING AIR QUALITY IN NEW JERSEY

The major objectives of monitoring air pollutant levels are: 1) to provide an early warning system for pollutant levels which may have the potential to endanger public health; 2) to assess air quality in light of established public health and welfare standards; and 3) to track air pollution trends and changes in ambient air quality due to changes in the amount of pollutants emitted.

Continuous air pollution monitoring provides critical information needed in the event of an air pollution episode. When meteorological conditions develop which may lead to an increase in airborne pollutants for extended periods of time, a threat to the public health, welfare, and safety may exist. When an air pollution episode occurs pollutant levels are carefully watched around-the-clock to ascertain if air quality has deteriorated sufficiently to warrant emergency actions. A daily reporting system known as the Air Quality Index (see pages 9-13) has been developed for disseminating air quality information daily and during emergency situations.

An air quality standard defines a limit for the atmospheric concentration of airborne contaminants and is established for the purpose of protecting the public health and welfare. Air quality standards are derived from scientific studies of the effects produced by various exposures to specific pollutants. The New Jersey and National Ambient Air Quality Standards are divided into primary and secondary standards. The primary standards define air quality levels intended to protect the public health with an adequate margin of safety. The secondary standards define levels of air quality intended to protect the public welfare from any known or anticipated adverse effects of a pollutant (e.g. soiling, vegetation damage, material corrosion). Both the State and National Ambient Air Quality Standards are listed in Table 1. This report compares the 2000 quality with these standards.

Ambient air quality standards cover relatively few air pollutants. For example, no ambient air quality standards exist for acid deposition, nitric oxide, smoke shade or particulate sulfate or nitrate. Yet these pollutants are significant and data on them are included in this report.

Finally, ambient air quality data are used as the baseline for evaluating the effect of the construction of new emission sources or of modifications to existing ones. Tracking ambient air quality is necessary to ensure that air quality standards will be achieved and maintained. Air quality data are also used as a baseline in the development of air pollution control regulations contained in the New Jersey State Implementation Plan.

TABLE 1

AMBIENT AIR QUALITY STANDARDS

| <u>Pollutant</u> | <u>Standard</u> | <u>Averaging Period</u> | <u>New Jersey (a)</u> | <u>National (b)</u> |
|-------------------------------|-----------------|-------------------------|----------------------------------|--------------------------------------|
| Sulfur Dioxide | Primary | 12-month arith. mean | 80 ug/m ³ (.03 ppm) | .030 ppm |
| | Primary | 24-hour average | 365 ug/m ³ (.14 ppm) | .14 ppm ^c |
| | Secondary | 12-month arith. mean | 60 ug/m ³ (.02 ppm) | --- |
| | Secondary | 24-hour average | 260 ug/m ³ (.10 ppm) | --- |
| | Secondary | 3-hour average | 1300 ug/m ³ (0.5 ppm) | 0.5 ppm ^c |
| Total Suspended Particulates | Primary | 12-month geom. mean | 75 ug/m ³ | --- |
| | Primary | 24-hour average | 260 ug/m ³ | --- |
| | Secondary | 12-month geom. mean (d) | 60 ug/m ³ | --- |
| | Secondary | 24-hour average | 150 ug/m ³ | --- |
| Inhalable Particulates (PM10) | Prim. & Sec. | Annual arith. mean | --- | 50 ug/m ³ |
| | Prim. & Sec. | 24-hour average | --- | 150 ug/m ³ |
| Fine Particulates (PM2.5) | Prim. & Sec. | Annual arith. mean | --- | 15 ug/m ³ |
| | Prim. & Sec. | 24-Hour Average | --- | 65 ug/m ³ |
| Carbon Monoxide | Prim. & Sec. | 8-hour average | 10 mg/m ³ (9 ppm) | 9 ppm (10 mg/m ³) (e) |
| | Prim. & Sec. | 1-hour average | 40 mg/m ³ (35 ppm) | 35 ppm (40 mg/m ³) (e) |
| Ozone | Primary | Max. Daily 1-Hr. Avg. | .12 ppm (235 ug/m ³) | .12 ppm (235 ug/m ³) (f) |
| | Secondary | 1-hour average | .08 ppm (160 ug/m ³) | .12 ppm (235 ug/m ³) (f) |
| | Prim. & Sec. | 8-hour average | --- | .08 ppm (160 ug/m ³) (g) |
| Nitrogen Dioxide | Prim. & Sec. | 12-month arith. mean | 100 ug/m ³ (.05 ppm) | .053 ppm (100 ug/m ³) |
| Lead | Prim. & Sec. | 3-month average | 1.5 ug/m ³ | --- |
| | | Quarterly Mean | --- | 1.5 ug/m ³ |

a) New Jersey short-term standards are not to be exceeded more than once in any 12-month period.

b) National short-term standards are not to be exceeded more than once in a calendar year.

c) National standards are block averages rather than moving averages.

d) Intended as a guideline for achieving short-term standard.

e) National secondary standards for carbon monoxide have been dropped.

f) Maximum daily 1-hour averages: averaged over a three year period the expected number of days above the standard must be less than or equal to one. This standard was replaced by an 8-hour average standard on September 18, 1997.

g) Standard is met when the 3-year average of the fourth highest daily maximum 8-hour average is less than or equal to .08 ppm. This new standard became effective September 18, 1997.

NEW JERSEY AIR MONITORING NETWORKS

A listing of monitoring locations in operation during 2000 along with addresses and parameters measured is shown in Table 2. The monitoring results contained in this report were provided by five separate networks: 1) Continuous Air Monitoring, 2) Particulate Sampling 3) Urban Air Toxics Monitoring 4) Photochemical Assessment Monitoring and 5) Precipitation Sampling.

The Continuous Air Monitoring Network consisted of 28 automated remote locations which transmitted data around-the-clock to a centralized computer facility located in Trenton. The computer interrogates the field monitors once each minute to retrieve the data. Pollutants monitored by the Continuous Air Monitoring Network include: sulfur dioxide, carbon monoxide, ozone, nitrogen oxides, smoke shade, particle matter and meteorological parameters such as wind speed/direction, temperature, relative humidity, solar radiation, and barometric pressure.

The Particulate Sampling Network consisted of 23 remote locations. Each sampler collected a 24-hour sample at least once every six days. Sampling data, however, are not available on a real-time basis. A field technician must retrieve the sample for laboratory work. A total of 21 samplers were operated for fine particulates and 10 samplers for inhalable particulates. In addition, 4 continuous monitoring instruments for fine particulates were in operation during 2000. Subsequent laboratory analyses for selected samples included determinations of the concentrations of lead, nitrates, and sulfates.

The urban air toxics monitoring program was expanded to two sites (Camden Lab and Elizabeth Lab) during 2000. Data from this program are listed in Table 11.

The Photochemical Assessment Monitoring Stations (PAMS) program is a major monitoring effort being implemented to measure levels of ozone precursors. This network provides hourly data on over 60 individual organics known to be important in ozone formation during the months of June, July and August. PAMS sites also measure Nitrogen Oxides, Ozone and specific weather parameters. The first PAMS site in New Jersey went on line on June 1, 1995 at Rider University. A second location at Rutgers University was put into operation in 1996. A third location in Camden was started in 1997. PAMS data reported in Tables 12 and 13.

The Precipitation Sampling Network consisted of three locations. Similar to the Particulate Sampling Network, this network does not provide continuous real-time data. Rain water samples are retrieved either on a weekly basis or after each storm event. Laboratory analyses provide information on the observed pH and conductivity along with the concentrations of sulfate, nitrate, chloride, calcium, magnesium, potassium, sodium and ammonium ions.

For federal reporting purposes some parameters were further subdivided by the following site coding:

1) State and Local Air Monitoring Sites (SLAMS) - These sites fulfill the federal monitoring requirements for the State.

2) National Air Monitoring Sites (NAMS) - These sites are a subset of the SLAMS which must comply with stricter siting criteria and reporting requirements.

3) Special Purpose Monitors (SPM) - These monitors fulfill a specific need or purpose and are not federally required. SPM's are used for a number of reasons: a) to collect data for research projects; b) to monitor around major point sources; or c) to collect data concerning pollutants for which National Ambient Air Quality Standards have not been established.

TABLE 2

NEW JERSEY AIR MONITORING PROGRAM -- 2000

PARAMETER CODING

| | | | | | |
|-----|---|----------------------------|-------|---|-------------------------------|
| AP | - | ACID PRECIPITATION | O3 | - | OZONE |
| CO | - | CARBON MONOXIDE | PAMS | - | PHOTOCHEMICAL ASSESSMENT SITE |
| CPM | - | CONTINUOUS PARTICLE MATTER | Pb | - | LEAD |
| FP | - | FINE PARTICULATES | S&N | - | SULFATES AND NITRATES |
| IP | - | INHALABLE PARTICULATES | SO2 | - | SULFUR DIOXIDE |
| MET | - | METEOROLOGICAL PARAMETERS | SS | - | SMOKE SHADE |
| NOX | - | NITROGEN OXIDES | UATMP | - | URBAN AIR TOXICS |

| <u>COUNTY</u> | <u>LOCATION</u> | <u>SAMPLER #</u> | <u>PARAMETERS</u> | <u>ADDRESS</u> |
|---------------|-------------------------------------|------------------|--|---|
| ATLANTIC | Atlantic City | IP36 | IP | Trump Plaza Parking Garage, Atlantic Ave. b/w Mississippi and Missouri Avenues |
| | Nacote Creek R.S. Somers Point | | O3,SO2 NOX,SO2 | Brigantine Wildlife Refuge Marina, Woodlawn Avenue |
| BERGEN | Fort Lee | IP14 | CO,CPM,IP,S&N | N. Bridge Plaza near Lemoine Ave. |
| | Fort Lee Hackensack Teaneck | F11 | FP CO,SO2,SS NOX,O3 | Library, Center Avenue 133 River Street Fairleigh Dickinson Univ., River Road |
| BURLINGTON | Burlington Lebanon State Forest | | CO,SO2,SS AP | 1 East Broad Street Route 70 |
| CAMDEN | Ancora State Hospital Camden Lab | F03,F04,IP02 | AP,CO,O3,SO2,SS CO,CPM,FP,IP,MET, NOX,O3,PAMS,S&N, SO2,SS,UATMP | N.J. Psychiatric Hospital Institute for Medical Research, Copewood & Davis Streets |
| | Camden - RRF | IP33,IP34 | IP | Camden Resource Recovery Facility |
| | Pennsauken | 071,IP10,F13 | FP,IP | Morris-Delair Water Plant |
| CUMBERLAND | Millville | | NOX,O3,SO2 | Lincoln Ave. & Highway 55 |
| ESSEX | East Orange | | CO,NOX,MET | Main Street & Greenwood Ave. |
| | Newark-Cultural Center | F10 | FP | 447 18 th Avenue |
| GLOUCESTER | Clarksboro Greenwich Twp. | F20 | O3,SO2 FP | Shady Lane Rest Home Gibbstown Municipal Bldg. 420 Washington Street |

TABLE 2 (CONT.)

| <u>COUNTY</u> | <u>LOCATION</u> | <u>SAMPLER #</u> | <u>PARAMETERS</u> | <u>ADDRESS</u> |
|---------------|---|------------------|--|---|
| HUDSON | Bayonne | | NOX,O3,SO2 | Veteran's Park |
| | Jersey City | | CO,SO2,SS | 2828 Kennedy Blvd. |
| | Jersey City | F07,F21,IP09 | FP,IP | 355 Newark Avenue |
| | North Bergen | IP35 | CO,IP | 3401 Tonnele Avenue |
| | Union City | F08 | FP | 714 31 st Street |
| HUNTERDON | Flemington | | MET,O3,SS | Raritan Sewage Plant |
| MERCER | Rider University | | MET,NOX,O3, PAMS | Rider University, Route 206 |
| | Trenton-Library | F14,IP06 | FP,IP | 120 Academy Street |
| | Washington Crossing State Park | F16 | AP,FP | Pennington-Titusville Road |
| MIDDLESEX | Middlesex New Brunswick | 057,068 | CO Pb | Route 1 & Georges Road Delco-Remy, 12 th St. & Livingston Ave. |
| | New Brunswick Perth Amboy | F06 | CPM,FP CO,SO2,SS | Log Cabin Road 130 Smith Street |
| | Rutgers University | | NOX,O3,PAMS | Horticultural Farm #3 Ryders Lane |
| MONMOUTH | Freehold Monmouth University | | CO,SS O3 | 5 W. Main Street Edison Science Building |
| MORRIS | Chester | F15 | FP,MET,NOX,O3 SO2 | Bell Labs, Route 513 |
| | Morristown Morristown Ambulance Squad | F18 | CO,SS FP | 11 Washington Street 16 Early Street |
| OCEAN | Colliers Mills | | O3 | Fish & Wildlife Management Area |
| | Toms River | F17 | FP | Elementary School, Hooper Avenue |
| PASSAIC | Paterson Ramapo | F09 | FP O3 | 176 Broadway Avenue Ramapo Mountain State Forest |
| UNION | Elizabeth Elizabeth-Mitchell Building | F12 | CO,SO2,SS FP | 7 Broad Street 500 North Broad Street |
| | Elizabeth Lab | F01,F02,IP28 | CO,CPM,FP,IP, MET,NOX,S&N,SO2 SS,UATMP | New Jersey Turnpike Interchange 13 |
| | Rahway | F22 | FP | Fire Department, 1300 Main Street |
| WARREN | Phillipsburg | F19 | FP | Municipal Building 675 Corliss Avenue |

DAILY AIR QUALITY REPORTING

A daily air quality summary for the previous day and a forecast, known as the Air Quality Index (AQI), is provided each morning to the Associated Press wire service, the New York Times, and to various radio and television stations. Each afternoon an air quality update which includes current air quality information and a forecast is issued to various newspapers. The State is divided into 9 AQI reporting regions as illustrated in Figure 1. Each pollutant monitored in the reporting region (Table 3) is given a numerical AQI rating based on the concentration recorded for the previous day. The daily numerical AQI rating for the reporting region is equal to the highest rating achieved by any pollutant within that region. A descriptive rating based on the numerical rating is also reported with a AQI of 0-50 being rated good; 51-100 moderate; 101-150 unhealthy for sensitive groups; 151-200 unhealthy; and 201-300 very unhealthy. A summary of the number of days with each descriptor rating is listed in Table 4. Table 5 lists the dates when the Air Quality Index exceeded the unhealthy threshold at any individual continuous monitoring location. A forecast consisting of the expected descriptor ratings over the next 72-hour period is also provided for each reporting region on weekdays. A telephone recording of the AQI forecast is taped by 11 a.m., Monday through Friday, and can be heard by dialing **1-800-782-0160**. Along with the forecast, cautionary statements are provided for days when the air quality is expected to be unhealthful.

A weekday "ozone forecast map" introduced during the 1996 ozone season was televised on the New Jersey Network's (NJN) TV News Broadcast. After the ozone season an air quality forecast map was substituted. A worldwide web page was also created in 1996 to show current air quality levels. This web page can be accessed at the following internet address:
<http://www.state.nj.us/dep/airmon>.

Figure 1. State of New Jersey
Air Quality Index Reporting Regions

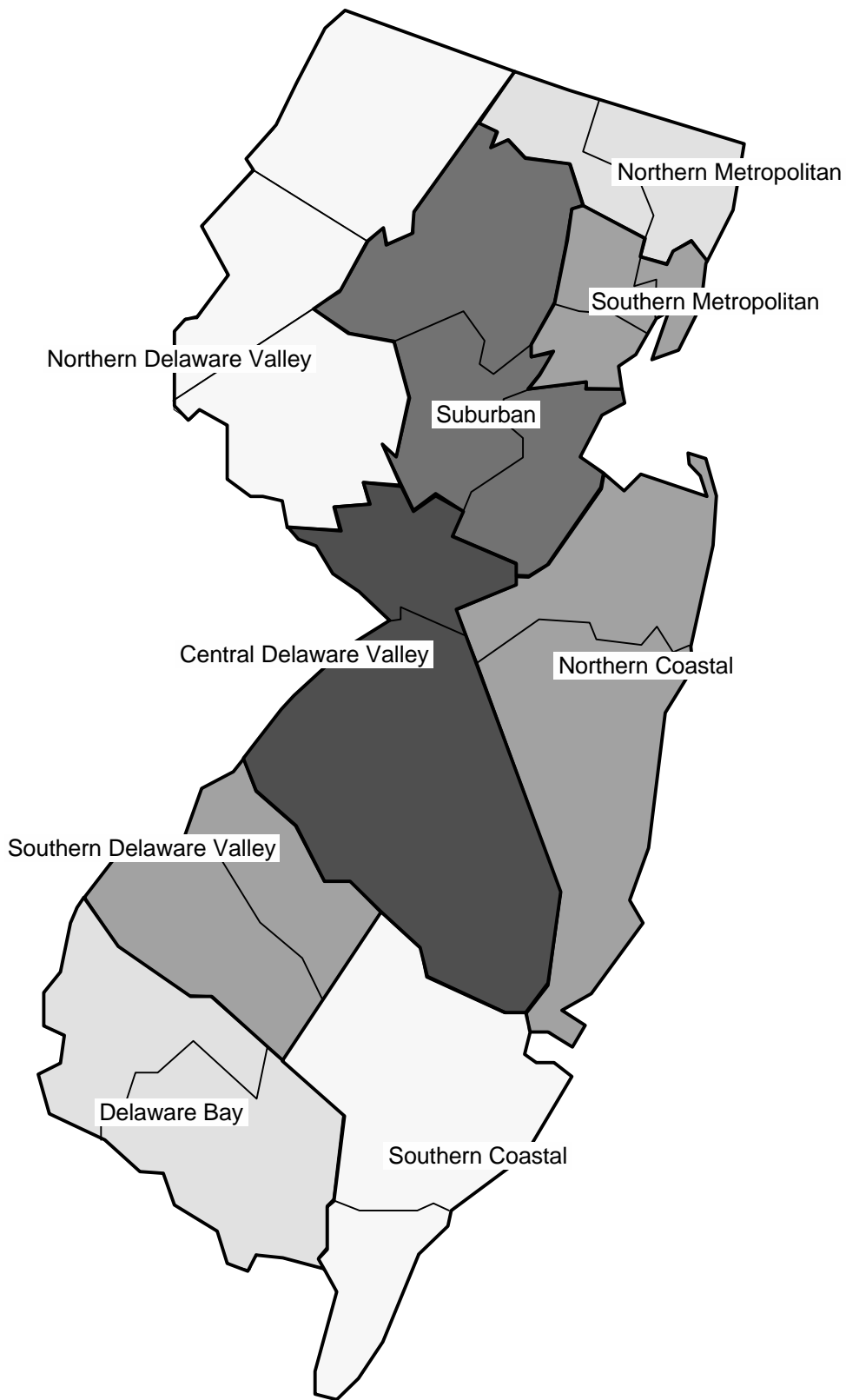


TABLE 3

POLLUTANTS MONITORED ACCORDING TO AIR QUALITY INDEX REGION

| <u>REPORTING REGION</u> | <u>MONITORING SITE</u> | <u>POLLUTANTS MONITORED</u> | | | | |
|--------------------------|------------------------|-----------------------------|------------|-----------|-----------|------------|
| | | <u>CO</u> | <u>SO2</u> | <u>PM</u> | <u>O3</u> | <u>NO2</u> |
| NORTHERN METROPOLITAN | Fort Lee | X | - | X | - | - |
| | Hackensack | X | X | X | - | - |
| | Ramapo | - | - | - | X | - |
| | Teaneck | - | - | - | X | X |
| SOUTHERN METROPOLITAN | Bayonne | - | X | - | X | X |
| | East Orange | X | - | - | - | X |
| | Elizabeth | X | X | X | - | - |
| | Elizabeth Lab | X | X | X | - | X |
| | Jersey City | X | X | X | - | - |
| | North Bergen | X | - | - | - | - |
| SUBURBAN | Chester | - | X | - | X | X |
| | Middlesex | X | - | - | - | - |
| | Morristown | X | - | X | - | - |
| | New Brunswick | - | - | X | - | - |
| | Perth Amboy | X | X | X | - | - |
| | Rutgers University | - | - | - | X | X |
| NORTHERN DELAWARE VALLEY | Flemington | - | - | X | X | - |
| CENTRAL DELAWARE VALLEY | Burlington | X | X | X | - | - |
| | Rider University | - | - | - | X | X |
| NORTHERN COASTAL | Colliers Mills | - | - | - | X | - |
| | Freehold | X | - | X | - | - |
| | Monmouth University | - | - | - | X | - |
| SOUTHERN COASTAL | Nacote Creek R.S. | - | X | - | X | - |
| | Somers Point | - | X | - | - | X |
| SOUTHERN DELAWARE VALLEY | Ancora S.H. | X | X | X | X | - |
| | Camden Lab | X | X | X | X | X |
| | Clarksboro | - | X | - | X | - |
| DELAWARE BAY | Millville | - | X | - | X | X |

POLLUTANT CODING

CO - Carbon Monoxide
SO2 - Sulfur Dioxide
PM - Particulate Matter
O3 - Ozone
NO2 - Nitrogen Dioxide

TABLE 4

AIR QUALITY INDEX (AQI)
ANNUAL SUMMARY - 2000

NUMBER OF DAYS

| AQI REPORTING REGION | DESCRIPTOR RATINGS | | | | |
|--------------------------|--------------------|----------|-----------------------------------|-----------|-------------------|
| | GOOD | MODERATE | UNHEALTHY FOR SENSITIVE GROUPS | UNHEALTHY | VERY UNHEALTHY |
| Northern Metropolitan | 148 | 200 | 18 | 0 | 0 |
| Southern Metropolitan | 177 | 183 | 6 | 0 | 0 |
| Suburban | 236 | 118 | 11 | 1 | 0 |
| Northern Delaware Valley | 330 | 27 | 8 | 1 | 0 |
| Central Delaware Valley | 328 | 27 | 9 | 2 | 0 |
| Northern Coastal | 310 | 45 | 7 | 2 | 2 |
| Southern Coastal | 337 | 25 | 4 | 0 | 0 |
| Southern Delaware Valley | 244 | 110 | 8 | 4 | 0 |
| Delaware Bay | 330 | 30 | 4 | 2 | 0 |
| Statewide | 122 | 216 | 24 | 2 | 2 |

TABLE 5

RECORD OF DAYS WHEN THE AIR QUALITY INDEX (AQI)EXCEEDED 100 DURING 2000

*NUMBER IN PARENTHESES () INDICATES NUMBER OF MONITORING
SITES EXCEEDING 100 ON GIVEN DAY

| <u>DATE</u> | <u>HIGHEST LOCATION</u> | <u>HIGHEST AQI VALUE</u> | <u>HIGHEST POLLUTANT</u> | <u>RATINGS</u> | | <u>POLLUTANTS</u> | |
|-------------|------------------------------|------------------------------|------------------------------|-------------------------------------|--------------------|--|---------------------------------|
| | | | | USG - UNHEALTHY FOR SENSITIVE GOUPS | UH - UNHEALTHY | PM - FINE PARTICLE MATTER (4 SITES MONITORED) | O3 - OZONE (14 SITES MONITORED) |
| | | | | <u>HIGHEST RATING</u> | <u># OF SITES*</u> | <u>ABOVE 100</u> | |
| Feb. 24 | Fort Lee | 102 | PM | USG | | | PM (1) |
| March 9 | Fort Lee | 102 | PM | USG | | | PM (1) |
| May 6 | Ancora S.H. | 116 | O3 | USG | O3 (3) | | |
| May 7 | Camden | 112 | PM | USG | O3 (1) | | PM (1) |
| May 8 | Colliers Mills | 145 | O3 | USG | O3 (7) | | PM (3) |
| May 9 | Colliers Mills | 150 | O3 | USG | O3 (6) | | PM (1) |
| May 12 | Clarksboro | 124 | O3 | USG | O3 (2) | | |
| June 1 | Ancora S.H. | 137 | O3 | USG | O3 (6) | | PM (1) |
| June 2 | Colliers Mills | 177 | O3 | UH | O3 (12) | | PM (3) |
| June 9 | Colliers Mills | 201 | O3 | VUH | O3 (12) | | PM (1) |
| June 10 | Colliers Mills | 204 | O3 | VUH | O3 (14) | | PM (4) |
| June 11 | Colliers Mills | 179 | O3 | UH | O3 (11) | | PM (3) |
| June 16 | Fort Lee | 106 | PM | USG | | | PM (1) |
| June 24 | Flemington | 119 | O3 | USG | O3 (3) | | |
| June 26 | Teaneck | 114 | O3 | USG | O3 (4) | | PM (1) |
| July 3 | Fort Lee | 112 | PM | USG | O3 (2) | | PM (1) |
| July 9 | Rider University | 109 | O3 | USG | O3 (3) | | |
| July 13 | Flemington | 101 | O3 | USG | O3 (1) | | |
| July 18 | Colliers Mills/ Millville | 101 | O3 | USG | O3 (2) | | |
| July 21 | Rutgers University | 116 | O3 | USG | O3 (1) | | |
| Aug. 2 | Fort Lee | 120 | PM | USG | | | PM (1) |
| Aug. 7 | Colliers Mills | 106 | O3 | USG | O3 (1) | | |
| Aug. 9 | Fort Lee | 118 | PM | USG | | | PM (1) |
| Aug. 10 | Ancora S.H. | 109 | O3 | USG | O3 (1) | | |
| Aug. 24 | Fort Lee | 108 | PM | USG | | | PM (1) |
| Aug. 28 | Fort Lee | 110 | PM | USG | | | PM (1) |
| Oct. 26 | Fort Lee | 120 | PM | USG | | | PM (1) |
| Oct. 27 | Elizabeth Lab | 116 | PM | USG | | | PM (3) |

AIR QUALITY SUMMARY
AND TREND ANALYSIS
REPORT
2000

Air Quality Summary 2000

In 2000, 3 of 14 monitoring locations for ozone recorded violations of the New Jersey (NJ) primary (health) ambient air quality standard (AAQS) as compared to 9 of 14 locations in 1999. In 2000, none of the 9 sampling locations exceeded the annual arithmetic mean national AAQS for inhalable particulates (PM-10). Also, in 2000 no contraventions of the New Jersey primary AAQS for carbon monoxide, nitrogen dioxide, lead, or sulfur dioxide were recorded at any monitoring locations for those pollutants. The following sections provide a brief summary of the monitoring information collected along with comparisons to the applicable AAQS:

Sulfur Dioxide (SO₂) - Sulfur dioxide was continuously monitored at 14 locations (see Figure 2) during 2000. Monitoring results for SO₂ are listed in Table 6. Neither the primary nor the secondary (public welfare) AAQS were violated in 2000. The maximum 24-hour average recorded in 2000 was 0.032 parts per million (ppm) at the Jersey City and Somers Point monitoring sites. The maximum 3-hour average recorded at Somers Point was 0.079 ppm. The highest annual average of 0.009 ppm was calculated for the Elizabeth Lab location. Trends in SO₂ levels from 1990-2000 are illustrated in Figure 3a. SO₂ emissions primarily result from the combustion of fossil fuels containing sulfur.

Fine Particulates (PM_{2.5}) - Fine Particulates were sampled at 18 locations (see Figure 4) during 2000. Sampling results for PM_{2.5} for 2000 are listed in Table 7. The highest arithmetic mean was calculated at 18.7 micrograms per cubic meter (ug/m³) for the Elizabeth Lab (F01) sampling location. The maximum 24-hour average of 77.8 ug/m³ was recorded at the Elizabeth Lab (F02) sampling location. A continuous monitoring methodology known as tapered element oscillating microbalance (TEOM) was utilized at 4 locations in 2000. Results are shown on Table 7.

Inhalable Particulates (PM-10) - Inhalable particulates were collected by 10 samplers operating at 9 locations (see Figure 5) during 2000. Two samplers were co-located at the Camden Resource Recovery Facility (RRF) to provide data for precision calculations. At this time, New Jersey has not adopted AAQS for inhalable particulates, however, the federal Environmental Protection Agency (EPA) promulgated AAQS for PM-10 in July, 1987. No sampling locations violated the national primary and secondary annual arithmetic mean AAQS during 2000. However, one site (Elizabeth Lab) exceeded the 24-hour AAQS in 2000. Sampling results for PM-10 are listed in Table 8. The highest annual arithmetic mean of 45.2 ug/m³ was calculated for the Camden RRF#2 sampler and the maximum 24-hour average of 156 ug/m³ was recorded at the Elizabeth Lab location. Trends in inhalable particulate levels from 1990-2000 are illustrated in Figure 6a.

Carbon Monoxide (CO) - Carbon monoxide was measured at 14 locations (see Figure 7) during 2000. Monitoring results for carbon monoxide are listed in Table 9. No monitoring locations violated the 1-hour or 8-hour primary and secondary AAQS during 2000. The maximum observed 8-hour average of 5.5 ppm was recorded at the North Bergen monitoring location. The maximum observed 1-hour average of 9.9 ppm was recorded by the Morristown monitoring location. Trends in CO levels from 1990-2000 are illustrated in Figure 8a. The predominant source of CO emissions is gasoline fueled automobiles and trucks.

Ozone (O3) - Ozone was monitored at 14 locations (see Figure 9) during 2000 and monitoring results are listed in Table 10. Three of fourteen monitoring locations violated the New Jersey primary 1-hour average AAQS during 2000. The maximum 1-hour average for ozone of 0.139 ppm was recorded at both the Clarksboro and Colliers Mills monitoring locations. All fourteen monitoring locations in operation during the summer violated New Jersey's secondary 1-hour average AAQS in 2000 with Ancora S.H. having the most occurrences (119 hours) above the secondary 1-hour average AAQS. Trends in 1-hour ozone levels from 1990-2000 are illustrated in Figure 10a. Ozone is caused by various photochemical reactions of volatile organics substances (hydrocarbons) with oxides of nitrogen on days with bright sunshine and warm temperatures. Thus ozone is only a potential problem in the late spring, summer, and early fall months. The national 8-hour ozone primary and secondary AAQS were exceeded at all 14 monitoring locations. The maximum 8-hour average of 0.132 ppm occurred at Colliers Mills.

Urban Air Toxics Monitoring Program (UATMP) - UATMP sampling was conducted at Camden Lab and Elizabeth Lab (see Figure 11) during 2000. Twenty-four hour samples were taken once every 12 days and sent to a laboratory for analyses to determine concentrations of about 70 organic compounds. Results are shown in Table 11.

Photochemical Assessment Monitoring Stations (PAMS) - PAMS samples were taken hourly at Camden Lab, Rider University, and Rutgers University (see Figure 11) during the months of June, July and August, 2000. Samples were analyzed by an automated gas chromatograph system which produced the results in Table 12. Eight three-hour samples were also collected every three days at the Camden Lab PAMS location during the same time period and sent to a laboratory for analyses for carbonyls. Results are shown in Table 13.

Nitrogen Oxides (NOX) - Nitrogen oxides were monitored at 10 locations (see Figure 12) during 2000. Monitoring results for the two major constituents of NOX, namely nitric oxide (NO) and nitrogen dioxide (NO₂), are listed in Table 14. Nitrogen dioxide primary and secondary AAQS were not violated at any of the monitoring sites in 2000. No ambient air quality standards have been promulgated for nitric oxide. The highest NO₂ 12-month average of 0.042 ppm was calculated for the Elizabeth Lab monitoring location. The highest annual average for nitric oxide (0.054 ppm) was also recorded by the Elizabeth Lab monitoring instrument. Trends in NO₂ levels from 1990-2000 are illustrated in Figure 13a. Nitrogen oxides are products of combustion which are emitted in approximately equal amounts from industrial boilers and motor vehicles.

Lead (Pb) - Lead levels were determined by analysis of filters obtained from 3 samplers in 2 cities (see Figure 14). Results of the laboratory analyses for lead are listed in Table 15. The highest 3-month average of 0.178 ug/m³ was calculated for samples from the New Brunswick-057 sampling location for the 3 months ending October 2000. Trends for lead from 1990-2000 are illustrated in Figure 15a. Lead as well as other trace metals are emitted in various proportions from motor vehicles, certain metal processing industries, and incinerators.

Smoke Shade (SS) - Smoke shade was monitored at 11 locations (see Figure 16) during 2000. Monitoring results for smoke shade are listed in Table 16. No AAQS have been established for this parameter although a rough correlation exists with 2.1 COHS (Coefficient of Haze) for a daily average approximately equivalent to the New Jersey primary 24-hour TSP AAQS of 260 ug/m³. The highest daily average of 2.46 COHS was recorded by the Perth Amboy monitoring location. The highest annual average of 0.55 COHS was calculated for the Jersey City location. Figures 17a & 17b show by monitoring location the highest and 2nd highest 24-hour daily averages and annual averages respectively.

Acid Precipitation (AP) - The New Jersey Precipitation Sampling Network consisted of three locations in 2000 (see Figure 18). Acid precipitation, more accurately described as acid deposition, has been implicated in the destruction of vegetation and aquatic life, the contamination of potable water supplies due to leaching of heavy metals, the accelerated weathering of materials, the aggravation of respiratory ailments, and the reduction of visibility.

Acid deposition results mainly from various chemical reactions involving sulfur dioxide and nitrogen oxide gases released into the atmosphere during fuel combustion. The compounds formed by these reactions can be deposited as dry particulate matter or wet precipitation.

When acidity is reported on the pH scale, neutral is considered as 7 with decreasing pH values corresponding to increasing acidity. Normal rainfall has a pH of approximately 5.6 due to the natural presence of carbonic acid in the atmosphere. The mean pH value recorded by the Washington Crossing Park weekly sampler was 4.40. The Ancora State Hospital sampler reported a mean pH of 4.43 and the Lebanon State Forest sampler recorded a mean pH of 4.36 during 2000. In addition to pH, analyses for conductivity and various anions and cations were performed. Analytical results for 2000 are presented in Table 17. Acid precipitation results from the Washington Crossing State Park event sampler are segregated by season, precipitation amounts, and meteorological regimes in Table 18. Figure 19 illustrates the recent trend in wet sulfate deposition.

Filters from 3 inhalable particulate (PM-10) samplers were analyzed for sulfates and nitrates (see Figure 20). Sulfates and nitrates are pollutants which form in the atmosphere and react with water to form acids which reduce the pH of rainfall. These sulfates and nitrates can travel long distances and reduce visibility. Some of these particles which settle out from the atmosphere (dry deposition) can later react with water to form acids on the ground. Results of the sulfate and nitrate analyses are listed in Table 19.

Meteorological Parameters (MET) - Meteorological parameters monitored on a continuous basis during 2000 were wind direction/speed, temperature, relative humidity, barometric pressure, and solar radiation (see Figure 21). Tables 20 and 21 summarize the 2000 meteorological monitoring results on a monthly basis.

Figure 2. State of New Jersey
Sulfur Dioxide Monitoring Network, 2000

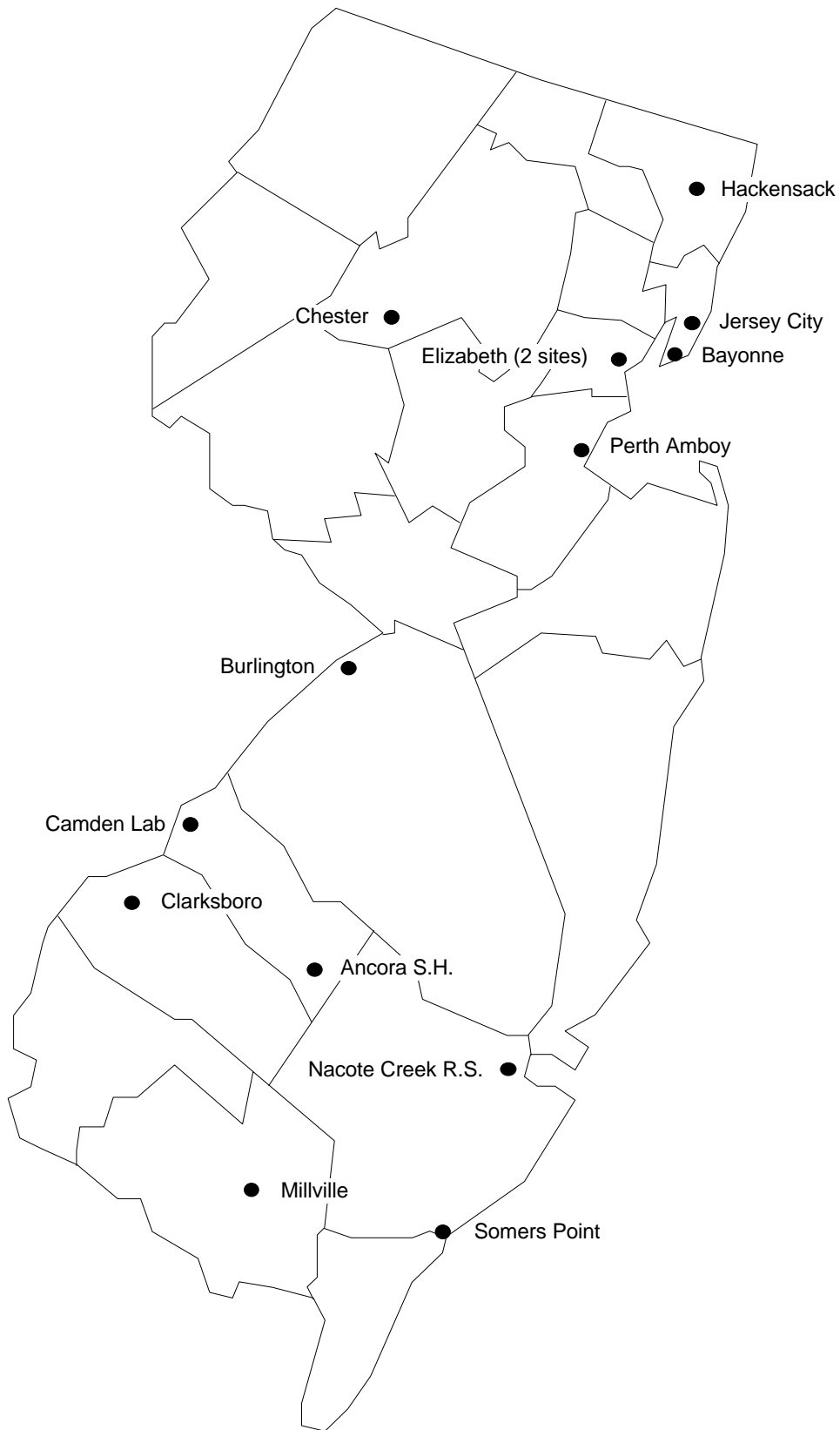


TABLE 6

AIR QUALITY IN NEW JERSEY COMPARED WITH AIR QUALITY STANDARDS - 2000

SULFUR DIOXIDE

3-HOUR AND ANNUAL AVERAGES
PARTS PER MILLION (PPM)

AMBIENT AIR QUALITY STANDARDS FOR SULFUR DIOXIDE
 3-HOUR AVERAGE SECONDARY STANDARD: 1300 ug/m³ (0.5 ppm)^a
 12-MONTH AVERAGE PRIMARY STANDARD: 80 ug/m³ (0.03 ppm)
 12-MONTH AVERAGE SECONDARY STANDARD: 60 ug/m³ (0.02 ppm)^b

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: XXX = NEW JERSEY & NATIONAL (PS) = PRIMARY STANDARD
 XX = NEW JERSEY (SS) = SECONDARY STANDARD
 -- = NO VIOLATION

| <u>Monitoring Site</u> | <u>Site Code</u> | <u>3-Hour Avg. Maximum</u> | <u>Avg. 2nd Highest</u> | <u>(ppm)^c</u> | <u># Above 0.5 ppm</u> | <u>Viol. Code</u> | <u>12-Month Average Maximum</u> | <u>Year</u> | <u>Viol. Code</u> |
|------------------------|------------------|----------------------------|------------------------------------|--------------------------|------------------------|-------------------|---------------------------------|-------------|-------------------|
| Ancora S.H. | S | .032 | .030 | | 0 | -- | .003 | .003 | -- |
| Bayonne | N | .040 | .038 | | 0 | -- | .006 | .006 | -- |
| Burlington | S | .041 | .039 | | 0 | -- | .004 | .004 | -- |
| Camden Lab | N | .063 | .050 | | 0 | -- | .006 | .006 | -- |
| Chester | S | .060 | .050 | | 0 | -- | .004 | .004 | -- |
| Clarksboro | S | .062 | .051 | | 0 | -- | .005 | .005 | -- |
| Elizabeth | S | .041 | .039 | | 0 | -- | .005 | .005 | -- |
| Elizabeth Lab | N | .072 | .060 | | 0 | -- | .009 | .009 | -- |
| Hackensack | S | .039 | .038 | | 0 | -- | .005 | .005 | -- |
| Jersey City | N | .047 | .042 | | 0 | -- | .008 | .008 | -- |
| Millville | S | .036 | .033 | | 0 | -- | .004 | .004 | -- |
| Nacote Creek R.S. | S | .030 | .028 | | 0 | -- | .003 | .003 | -- |
| Perth Amboy | N | .043 | .032 | | 0 | -- | .005 | .005 | -- |
| Somers Point | SPM | .079 | .076 | | 0 | -- | .003 | .003 | -- |

- a) New Jersey and National Ambient Air Quality Standard not to be exceeded more than once in any 12-month period.
 b) New Jersey Ambient Air Quality Standard.
 c) Based on non-overlapping 3-hour moving averages.

TABLE 6 (Cont.)

AIR QUALITY IN NEW JERSEY COMPARED WITH AIR QUALITY STANDARDS - 2000

SULFUR DIOXIDE

24-HOUR AND DAILY AVERAGES
PARTS PER MILLION (PPM)

AMBIENT AIR QUALITY STANDARDS FOR SULFUR DIOXIDE
 24-HOUR AVERAGE PRIMARY STANDARD: 365 ug/m³ (0.14 ppm)^a
 24-HOUR AVERAGE SECONDARY STANDARD: 260 ug/m³ (0.10 ppm)^a
 DAILY AVERAGE PRIMARY STANDARD: 0.14 ppm (365 ug/m³)^b

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: XXX = NEW JERSEY & NATIONAL (PS) = PRIMARY STANDARD
 XX = NEW JERSEY (SS) = SECONDARY STANDARD
 -- = NO VIOLATION

| Monitoring Site | Site Code | 24-Hour Avg. (ppm) ^c | | # Above | | Viol. Code | Daily Average | | Viol. Code |
|-------------------|-----------|---------------------------------|-------------------------|---------|------|------------|---------------|-------------------------|------------|
| | | Maximum | 2 nd Highest | 0.14 | 0.10 | | Maximum | 2 nd Highest | |
| Ancora S.H. | S | .022 | .017 | 0 | 0 | -- | .017 | .017 | -- |
| Bayonne | N | .023 | .023 | 0 | 0 | -- | .022 | .022 | -- |
| Burlington | S | .016 | .016 | 0 | 0 | -- | .016 | .015 | -- |
| Camden Lab | N | .030 | .023 | 0 | 0 | -- | .029 | .020 | -- |
| Chester | S | .029 | .022 | 0 | 0 | -- | .023 | .020 | -- |
| Clarksboro | S | .027 | .026 | 0 | 0 | -- | .026 | .021 | -- |
| Elizabeth | S | .023 | .021 | 0 | 0 | -- | .022 | .021 | -- |
| Elizabeth Lab | N | .028 | .027 | 0 | 0 | -- | .027 | .025 | -- |
| Hackensack | S | .021 | .021 | 0 | 0 | -- | .021 | .020 | -- |
| Jersey City | N | .032 | .029 | 0 | 0 | -- | .028 | .025 | -- |
| Millville | S | .025 | .020 | 0 | 0 | -- | .020 | .017 | -- |
| Nacote Creek R.S. | S | .020 | .017 | 0 | 0 | -- | .016 | .013 | -- |
| Perth Amboy | N | .019 | .018 | 0 | 0 | -- | .018 | .018 | -- |
| Somers Point | SPM | .032 | .024 | 0 | 0 | -- | .032 | .024 | -- |

- a) Ambient Air Quality Standard not to be exceeded more than once in any 12-month period.
- b) National Ambient Air Quality Standard not to be exceeded more than once a year.
- c) Based on non-overlapping 24-hour moving averages.

Figure 3a. Trend in Sulfur Dioxide Concentrations in New Jersey, 1990-2000: Second Highest Daily Averages

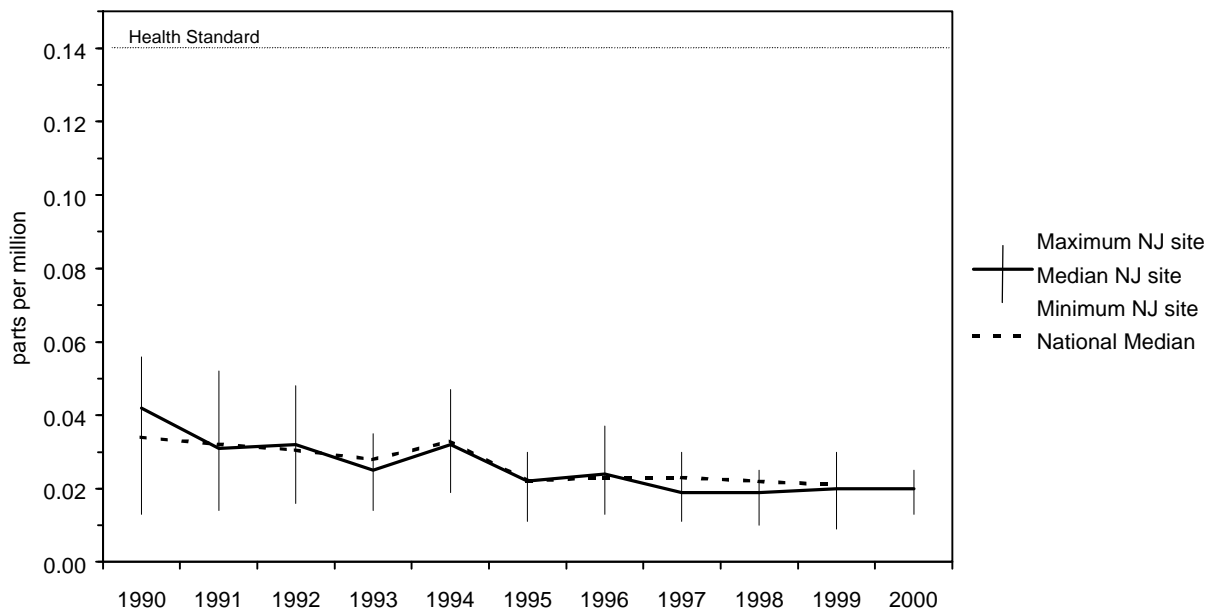


Figure 3b. 2000 Sulfur Dioxide Concentrations in New Jersey: Highest and Second Highest Daily Averages

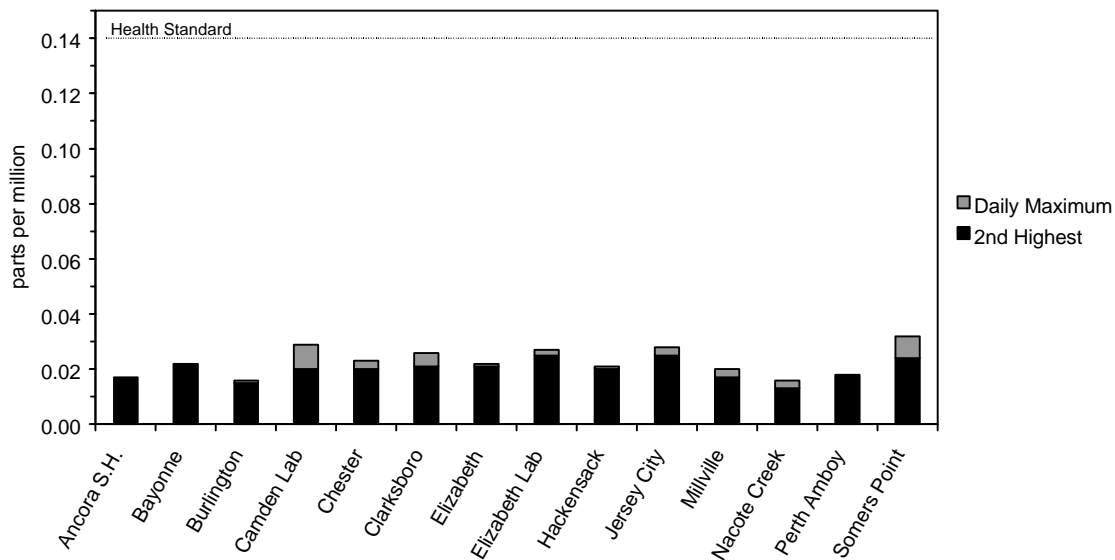


Figure 4. State of New Jersey
Fine Particulate Monitoring Network, 2000

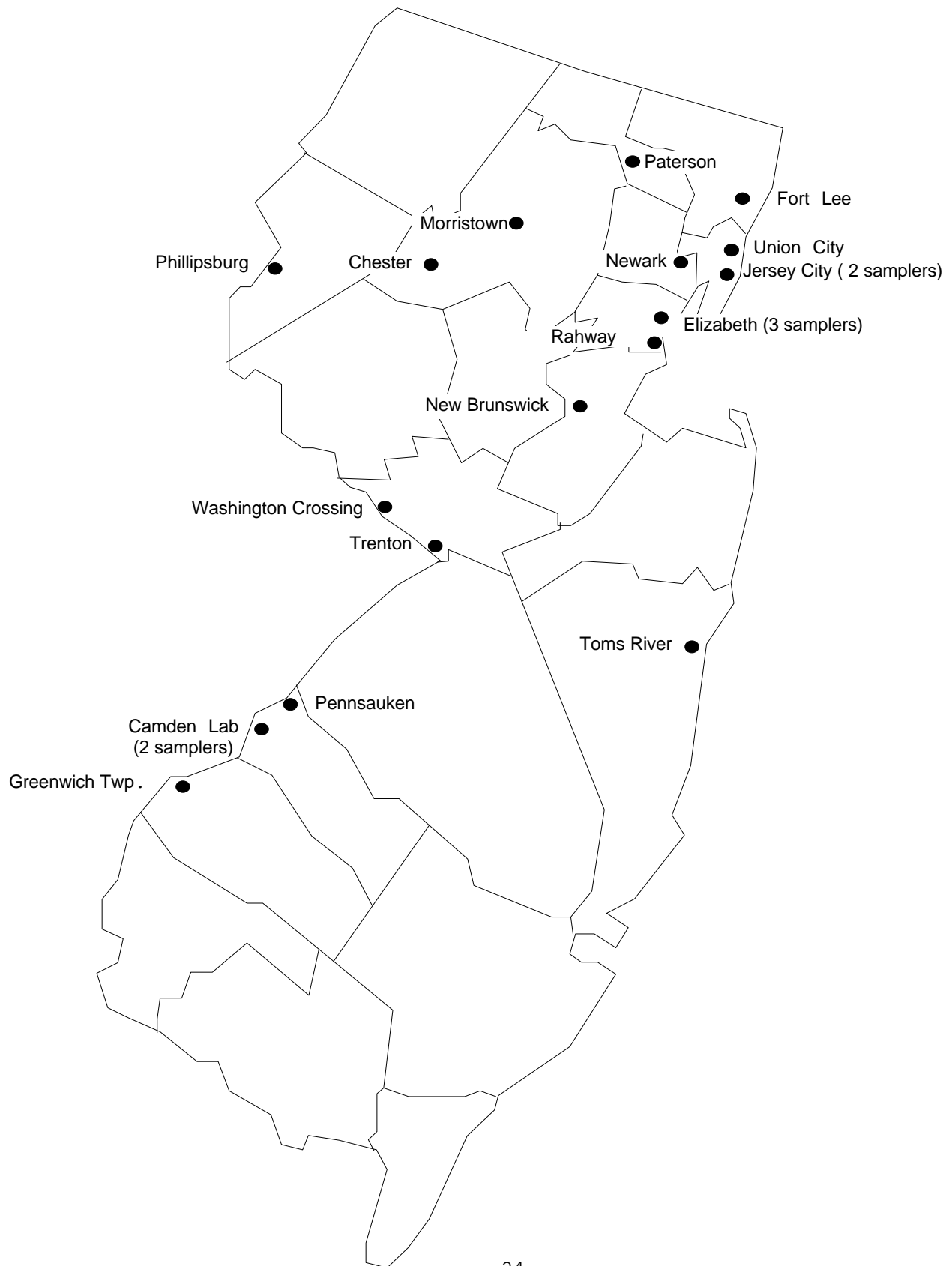


TABLE 7
 AIR QUALITY IN NEW JERSEY
 COMPARED WITH AIR QUALITY STANDARDS -- 2000
 FINE PARTICULATES (PM-2.5)
 AT LOCAL CONDITIONS
 ANNUAL STATISTICS^a

NATIONAL AMBIENT AIR QUALITY STANDARDS FOR FINE PARTICULATES:
 ANNUAL ARITHMETIC MEAN PRIMARY AND SECONDARY STANDARDS: 15 ug/m³
 24-HOUR AVERAGE PRIMARY AND SECONDARY STANDARDS: 65 ug/m³

DATA IN PARENTHESES () INDICATES INSUFFICIENT DATA TO CALCULATE VALID ANNUAL
 ARITHMETIC MEAN

| <u>Monitoring Site</u> | <u>Sampler No.</u> | <u># of Samples</u> | <u>Annual Arith. Mean</u> | <u>24-Hour Average Maximum</u> | <u>2nd Highest</u> |
|--------------------------|--------------------|---------------------|---------------------------|--------------------------------|--------------------|
| Camden Lab | F03 | 53 | (15.9) | 31.0 | 30.9 |
| Camden Lab | F04 | 108 | (15.0) | 48.6 | 44.2 |
| Chester | F15 | 111 | (11.1) | 36.0 | 29.9 |
| Elizabeth Lab | F01 | 56 | 18.7 | 74.8 | 46.6 |
| Elizabeth Lab | F02 | 253 | (17.0) | 77.7 | 54.1 |
| Elizabeth-Mitchell Bldg. | F12 | 106 | (15.2) | 64.8 | 43.4 |
| Fort Lee | F11 | 115 | 14.6 | 54.4 | 37.7 |
| Greenwich Twp. | F20 | 108 | 15.2 | 48.0 | 42.4 |
| Jersey City | F07 | 102 | (16.8) | 66.7 | 39.9 |
| Jersey City | F21 | 49 | (17.4) | 69.3 | 38.8 |
| Morristown | F18 | 110 | 12.9 | 39.5 | 32.4 |
| Newark-Cultural Center | F10 | 108 | (15.6) | 65.1 | 44.9 |
| New Brunswick | F06 | 107 | (13.1) | 54.2 | 40.9 |
| Paterson | F09 | 98 | (13.7) | 40.4 | 35.4 |
| Pennsauken | F13 | 103 | (15.5) | 43.5 | 41.8 |
| Phillipsburg | F19 | 104 | 14.0 | 45.5 | 40.6 |
| Rahway | F22 | 115 | 14.2 | 55.8 | 38.7 |
| Toms River | F17 | 98 | (11.5) | 40.6 | 36.6 |
| Trenton | F14 | 112 | 14.7 | 48.1 | 43.4 |
| Union City | F08 | 101 | (17.2) | 60.6 | 42.8 |
| Washington Crossing | F16 | 111 | 12.1 | 40.5 | 34.1 |

PARTICLE MATTER
 CONTINUOUS MONITORING METHODOLOGY
 TAPERED ELEMENT OSCILLATING MICROBALANCE (TEOM)
 2.5 MICRON FRACTION

| | | | | |
|---------------|-----|----|----|----|
| Camden Lab | SPM | 14 | 56 | 48 |
| Elizabeth Lab | SPM | 15 | 48 | 47 |
| Fort Lee | SPM | 19 | 53 | 52 |
| New Brunswick | SPM | 13 | 46 | 43 |

Figure 5. State of New Jersey
Inhalable Particulates Monitoring Network, 2000

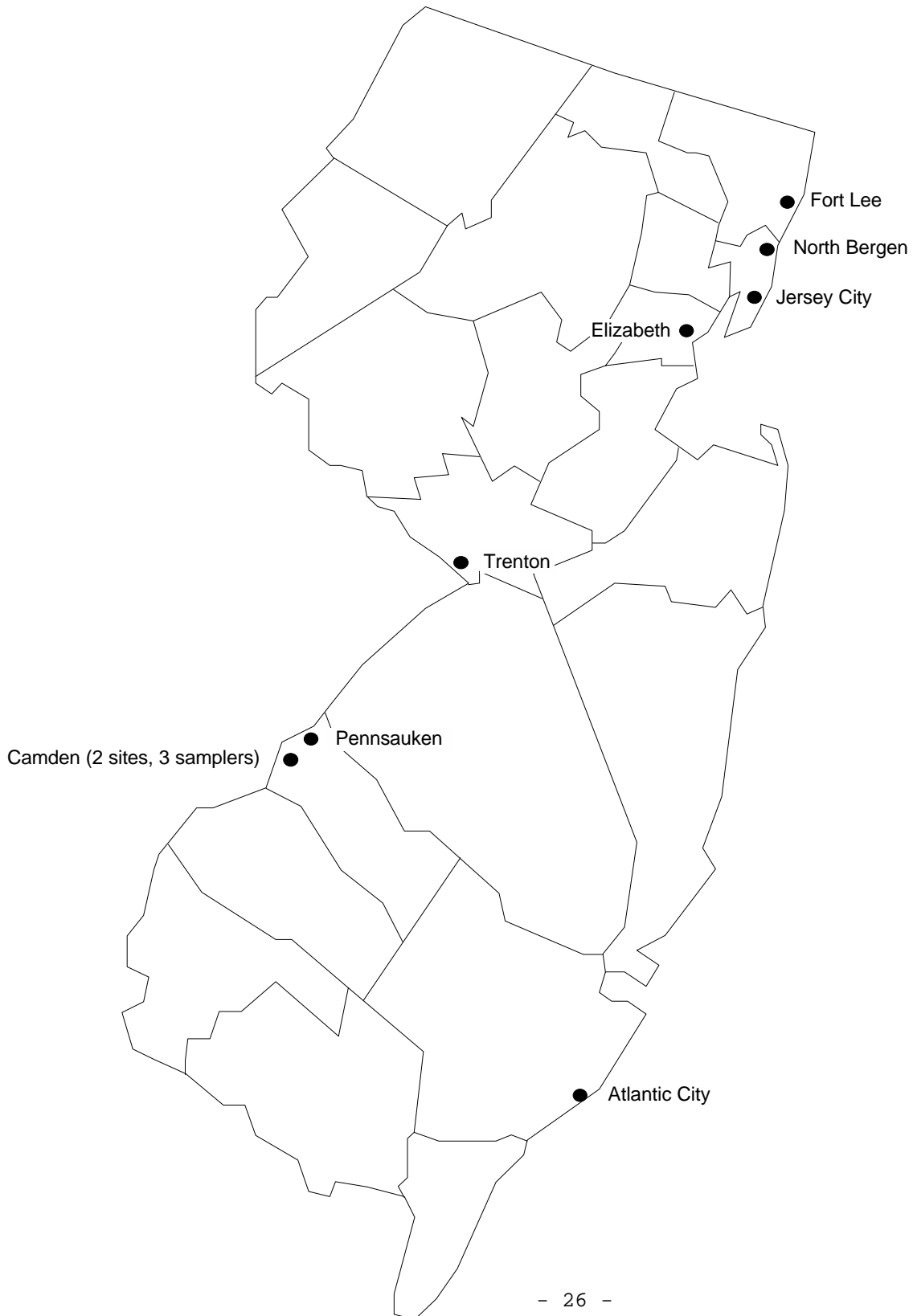


TABLE 8
 AIR QUALITY IN NEW JERSEY
 COMPARED WITH AIR QUALITY STANDARDS -- 2000
 INHALABLE PARTICULATES (PM-10)
 AT STANDARD PRESSURE AND TEMPERATURE CONDITIONS
 ANNUAL STATISTICS
 MICROGRAMS PER CUBIC METER (ug/m³)

NATIONAL AMBIENT AIR QUALITY STANDARDS FOR INHALABLE PARTICULATES:
 ANNUAL ARITHMETIC MEAN PRIMARY & SECONDARY STANDARD: 50 ug/m³
 24-HOUR AVERAGE PRIMARY & SECONDARY STANDARD: 150 ug/m³

SITE CODES: N = NAMS, S = SLAMS, PM = SPECIAL PURPOSE MONITORING
 **** = INSUFFICIENT DATA FOR VALID ANNUAL ARITHMETIC MEAN

| <u>Monitoring Site</u> | <u>Sampler No.</u> | <u>Site Code</u> | <u># of Samples</u> | <u>Annual Arith. Mean</u> | <u>24-Hour Average Maximum</u> | <u>Average 2nd Highest</u> |
|-------------------------|--------------------|------------------|---------------------|---------------------------|--------------------------------|---------------------------------------|
| Atlantic City | IP36 | S | 58 | 23.3 | 46 | 41 |
| Camden Lab | IP02 | N | 57 | 25.6 | 77 | 51 |
| Camden RRF #1 | IP33 | SPM | 54 | 38.4 | 106 | 77 |
| Camden RRF #2 | IP34 | SPM | 56 | 45.2 | 137 | 102 |
| Elizabeth Lab | IP28 | S | 58 | 35.1 | 156 | 108 |
| Fort Lee | IP14 | N | 60 | 36.4 | 86 | 86 |
| Jersey City-Newark Ave. | IP09 | N | 52 | 30.3 | 99 | 63 |
| North Bergen | IP35 | S | 20 | **** | 83 | 65 |
| Pennsauken-WTP | IP10 | S | 58 | 28.7 | 144 | 76 |
| Trenton | IP06 | S | 57 | 25.7 | 59 | 55 |

Figure 6a. Trend in Inhalable Particulate Concentrations in New Jersey, 1990-2000: Annual Averages

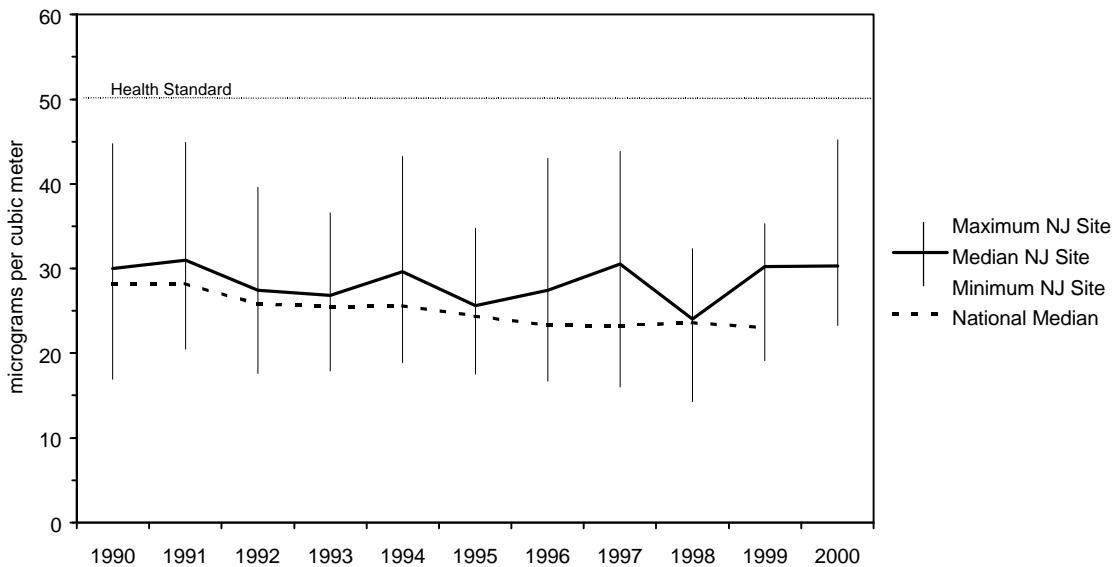


Figure 6b. 2000 Inhalable Particulate Concentrations in New Jersey: Annual Averages

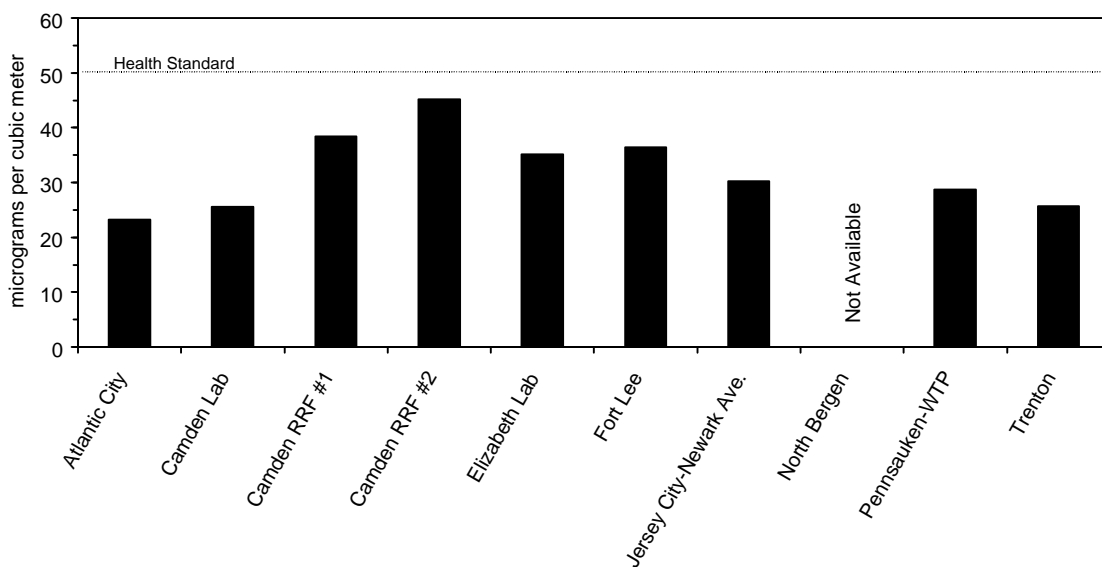


Figure 7. State of New Jersey
Carbon Monoxide Monitoring Network, 2000

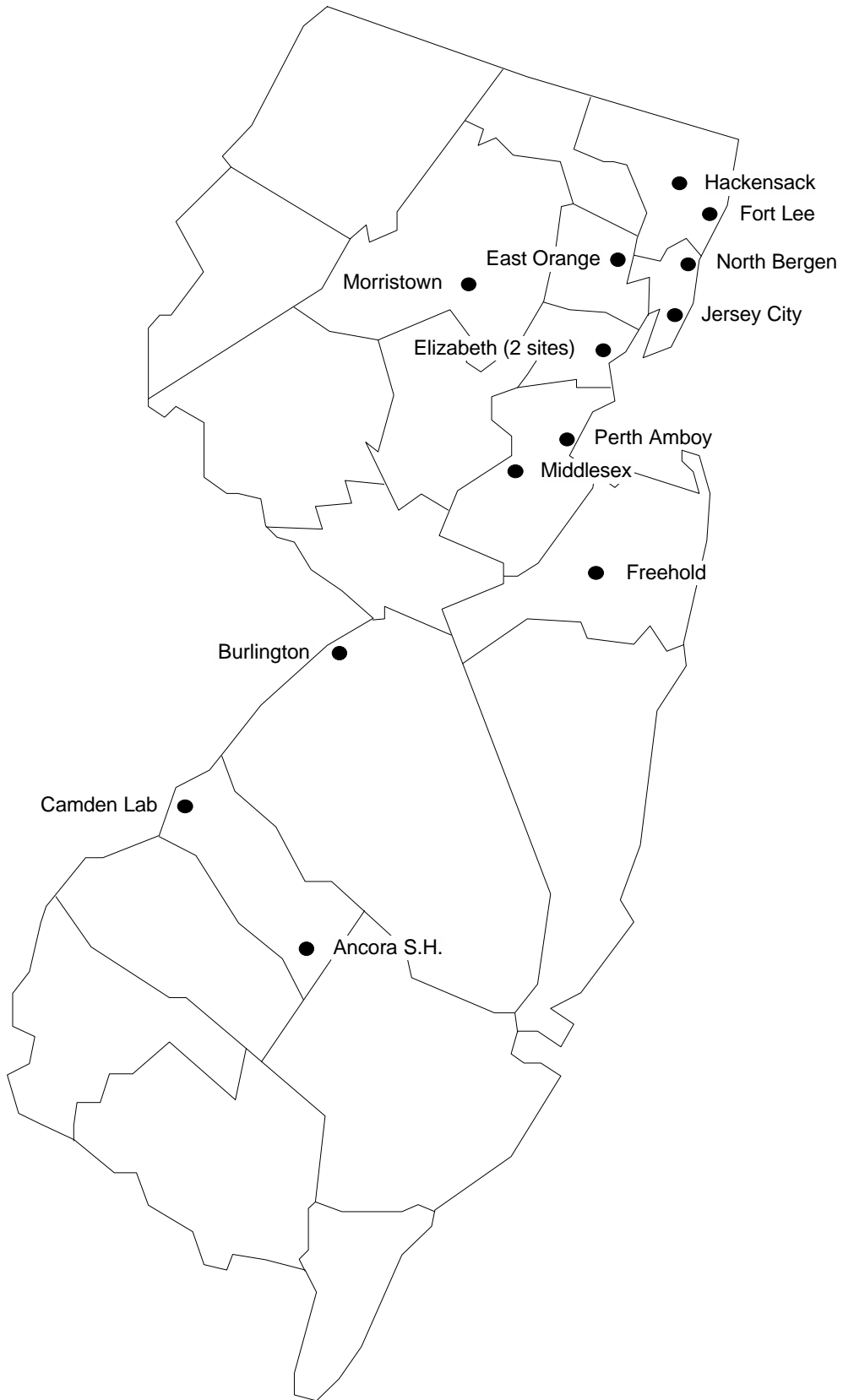


TABLE 9

AIR QUALITY IN NEW JERSEY
COMPARED WITH AIR QUALITY STANDARDS -- 2000

CARBON MONOXIDE
PARTS PER MILLION (PPM)

AMBIENT AIR QUALITY STANDARDS FOR CARBON MONOXIDE:

1-HOUR AVERAGE PRIMARY & SECONDARY STANDARD: 40 mg/m³ (35 ppm)^a

1-HOUR AVERAGE NATIONAL PRIMARY STANDARD: 35 ppm

8-HOUR AVERAGE PRIMARY & SECONDARY: 10 mg/m³ (9 ppm)^a

8-HOUR AVERAGE NATIONAL PRIMARY STANDARD: 9 ppm

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: XXX = NEW JERSEY & NATIONAL, -- = NO VIOLATION

XX = NEW JERSEY

| Monitoring Site | Site Code | 1-Hour Max. | Avg. (ppm) 2 nd Highest | # Above 35 ppm | Viol. Code | 8-Hour Max. | Avg. (ppm) ^b 2 nd Highest | # Above 9.0 ppm | Viol. Code |
|---------------------------|-----------|-------------|------------------------------------|----------------|------------|-------------|---|-----------------|------------|
| Ancora S.H. | S | 1.7 | 1.6 | 0 | -- | 1.2 | 1.2 | 0 | -- |
| Burlington | S | 7.9 | 5.1 | 0 | -- | 3.9 | 3.7 | 0 | -- |
| Camden Lab | S | 8.2 | 5.3 | 0 | -- | 4.5 | 4.3 | 0 | -- |
| East Orange | SPM | 7.3 | 6.5 | 0 | -- | 4.6 | 3.7 | 0 | -- |
| Elizabeth | S | 7.5 | 7.2 | 0 | -- | 5.0 | 4.7 | 0 | -- |
| Elizabeth Lab | SPM | 5.0 | 4.7 | 0 | -- | 3.5 | 3.5 | 0 | -- |
| Fort Lee | S | 5.7 | 4.8 | 0 | -- | 3.8 | 3.4 | 0 | -- |
| Freehold | S | 7.6 | 7.0 | 0 | -- | 3.2 | 3.2 | 0 | -- |
| Hackensack | N | 4.8 | 4.6 | 0 | -- | 4.3 | 3.4 | 0 | -- |
| Jersey City | N | 6.0 | 5.3 | 0 | -- | 3.8 | 3.7 | 0 | -- |
| Middlesex | SPM | 4.7 | 4.6 | 0 | -- | 3.4 | 3.3 | 0 | -- |
| Morristown | S | 9.9 | 5.1 | 0 | -- | 3.1 | 3.1 | 0 | -- |
| North Bergen ^c | S | 9.1 | 8.5 | 0 | -- | 5.5 | 4.9 | 0 | -- |
| Perth Amboy | S | 4.9 | 4.7 | 0 | -- | 3.8 | 3.2 | 0 | -- |

mg/m³ - milligrams per cubic meter

a) New Jersey Ambient Air Quality Standard not to be exceeded more than once in any 12-month period.

b) Based on non-overlapping 8-hour moving averages.

c) Data not available after May 17th.

Figure 8a. Trend in Carbon Monoxide Concentrations in New Jersey, 1990-2000:
Second Highest 8-Hour Averages

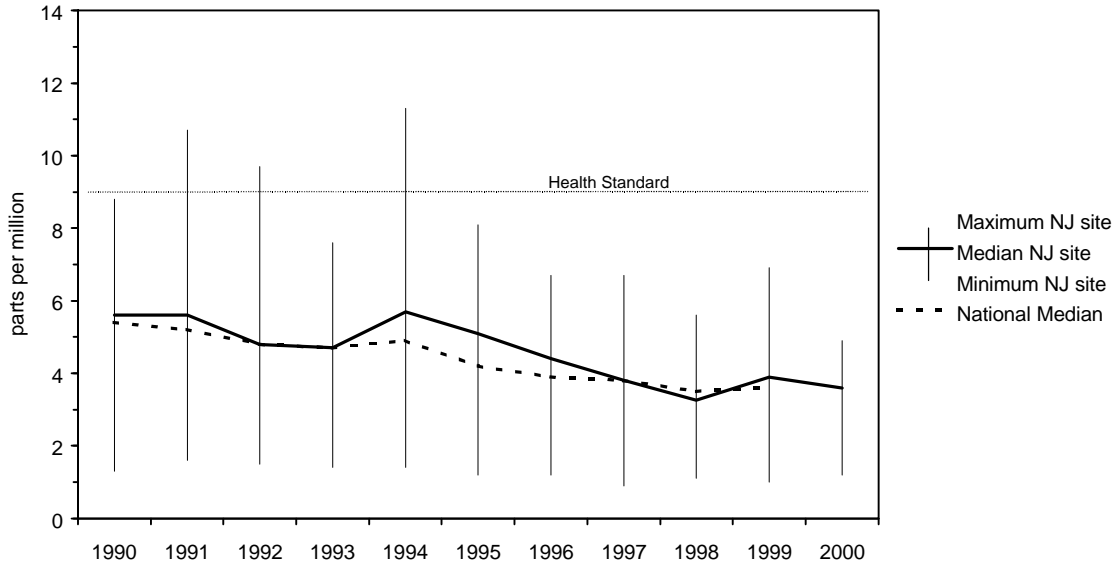


Figure 8b. 2000 Carbon Monoxide Concentrations in New Jersey:
Highest and Second Highest 8-Hour Averages

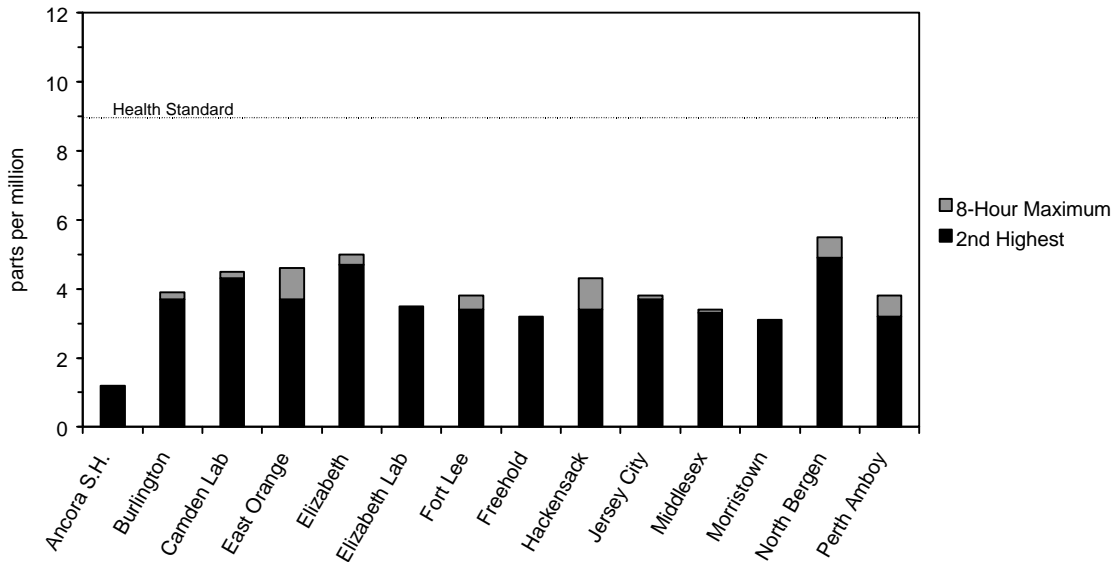


Figure 9. State of New Jersey
Ozone Monitoring Network, 2000

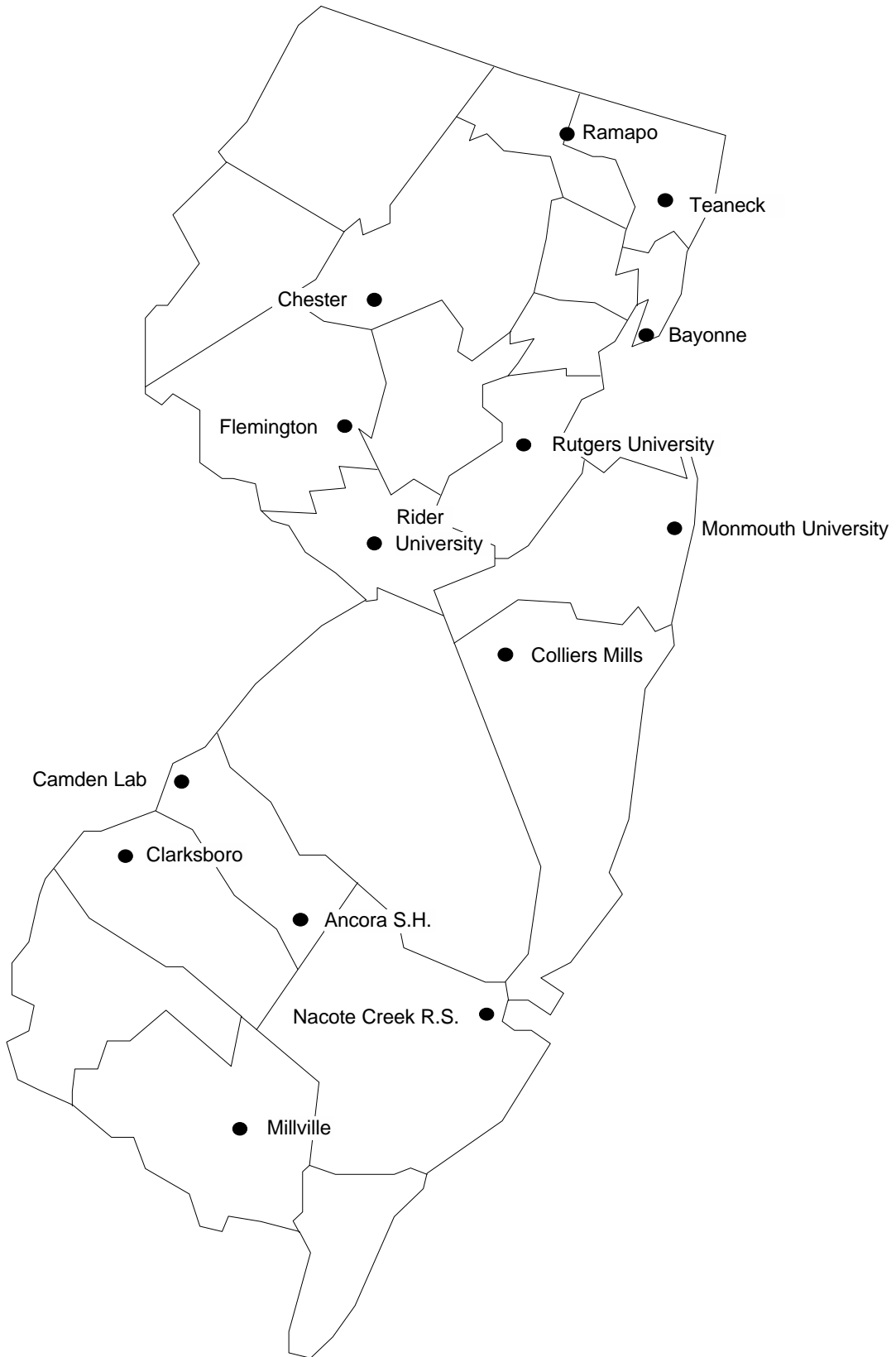


TABLE 10

AIR QUALITY IN NEW JERSEY
COMPARED WITH AIR QUALITY STANDARDS -- 2000

OZONE
1-HOUR AVERAGES
PARTS PER MILLION (ppm)

AMBIENT AIR QUALITY STANDARDS FOR OZONE
MAXIMUM DAILY 1-HOUR AVG. PRIMARY STANDARD: 0.12 ppm (235 ug/m³)^{ab}
1-HOUR AVERAGE SECONDARY STANDARD: 0.08 ppm (160 ug/m³)^b

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: XXX = NEW JERSEY AND NATIONAL (PS) = PRIMARY STANDARD
XX = NEW JERSEY (SS) = SECONDARY STANDARD
X = NATIONAL --- = NO VIOLATION

| Monitoring Site | Site Code | Daily Max. | | # of Days with Hrs. Above .12 | Viol. Code | # of Hrs. | | | Viol. Code |
|----------------------|-----------|-------------------|-----------------------|-------------------------------|------------|----------------------|-----------------------|-----------|------------|
| | | 1-Hour Avg. Hgst. | 2 nd Hgst. | | | 1-Hour Averages Max. | 2 nd Hgst. | Above .08 | |
| Ancora S.H. | S | .129 | .128 | 2 | XXX(PS) | .129 | .128 | 119 | XX(SS) |
| Bayonne | N | .108 | .103 | 0 | --- | .108 | .107 | 41 | XX(SS) |
| Camden Lab | N | .131 | .116 | 1 | XX(PS) | .131 | .128 | 64 | XX(SS) |
| Chester | S | .118 | .110 | 0 | --- | .118 | .118 | 74 | XX(SS) |
| Clarksboro | N | .139 | .124 | 1 | XX(PS) | .139 | .132 | 87 | XX(SS) |
| Colliers Mills | S | .139 | .136 | 4 | XXX(PS) | .139 | .138 | 109 | XX(SS) |
| Flemington | S | .116 | .110 | 0 | --- | .116 | .112 | 89 | XX(SS) |
| Millville | S | .127 | .117 | 1 | --- | .127 | .125 | 59 | XX(SS) |
| Monmouth University | S | .130 | .129 | 2 | XXX(PS) | .130 | .129 | 60 | XX(SS) |
| Nacote Creek R.S. | S | .112 | .108 | 0 | --- | .112 | .108 | 38 | XX(SS) |
| Ramapo | S | .102 | .101 | 0 | --- | .102 | .101 | 27 | XX(SS) |
| Rider University | N | .124 | .113 | 0 | --- | .124 | .122 | 89 | XX(SS) |
| Rutgers University | S | .118 | .112 | 0 | --- | .118 | .117 | 89 | XX(SS) |
| Teaneck ^c | S | .105 | .101 | 0 | --- | .105 | .101 | 28 | XX(SS) |
| Statewide | | .139 | .136 | 4 | | | | | |

ug/m³ - micrograms per cubic meter

- a) National Ambient Air Quality Standard - averaged over a three period, the expected number of days above the standards must be less than or equal to one.
b) New Jersey Ambient Air Quality Standard not to be exceeded more than once in any 12-month period.
c) Data not available prior to June 15th.

Table 10 (Cont.)
 AIR QUALITY IN NEW JERSEY COMPARED WITH AIR QUALITY STANDARDS -- 2000

OZONE
 8-HOUR AVERAGES
 PARTS PER MILLION (PPM)

AMBIENT AIR QUALITY STANDARD FOR OZONE:
 8-HOUR AVERAGE PRIMARY & SECONDARY STANDARD: 0.08 PPM^a

SITE CODES: N= NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: X = NATIONAL (PS) = PRIMARY STANDARD
 --- = NO VIOLATION

| Monitoring Site | Site Code | Daily Maximum 8-hour Average | | | | Average of 4 th Highest 8-Hour Average 1998 - 2000 | Viol. Code | # of Days with 8-Hour Averages Above .08 (PPM) |
|----------------------|-----------|------------------------------|-----------------|-----------------|-----------------|---|------------------|--|
| | | 1 st | 2 nd | 3 rd | 4 th | | | |
| Ancora S.H. | S | .121 | .119 | .110 | .102 | .101 | X(PS) | 10 |
| Bayonne | N | .103 | .090 | .090 | .082 | .092 | X(PS) | 3 |
| Camden Lab | N | .121 | .102 | .101 | .088 | .095 | X(PS) | 6 |
| Chester | N | .115 | .099 | .099 | .090 | .096 | X(PS) | 6 |
| Clarksboro | N | .124 | .114 | .108 | .104 | .102 | X(PS) | 8 |
| Colliers Mills | S | .132 | .125 | .116 | .115 | .108 | X(PS) | 11 |
| Flemington | S | .106 | .102 | .095 | .092 | .099 | X(PS) | 9 |
| Millville | S | .113 | .106 | .103 | .094 | .096 | X(PS) | 6 |
| Monmouth Univ. | S | .118 | .104 | .101 | .099 | .096 | X(PS) | 5 |
| Nacote Creek R.S. | S | .099 | .099 | .088 | .085 | .090 | X(PS) | 4 |
| Ramapo | S | .097 | .082 | .081 | .081 | .089 | X(PS) | 1 |
| Rider University | N | .120 | .108 | .104 | .098 | .102 | X(PS) | 11 |
| Rutgers University | S | .112 | .102 | .100 | .095 | .101 | X(PS) | 10 |
| Teaneck ^b | S | .090 | .086 | .081 | .077 | --- | (^b) | 12 |
| Statewide | | .132 | .125 | .116 | .115 | .115 | | 19 |

- a) National Ambient Air Quality Standard - The average of the 4th highest daily maximum 8-hour average over a 3 year period must be less than or equal to 0.08 ppm.
- b) Data not available prior to June 15th.

Figure 10a. Trend in Ozone Concentrations in New Jersey, 1990-2000:
Second Highest 1-Hour Averages

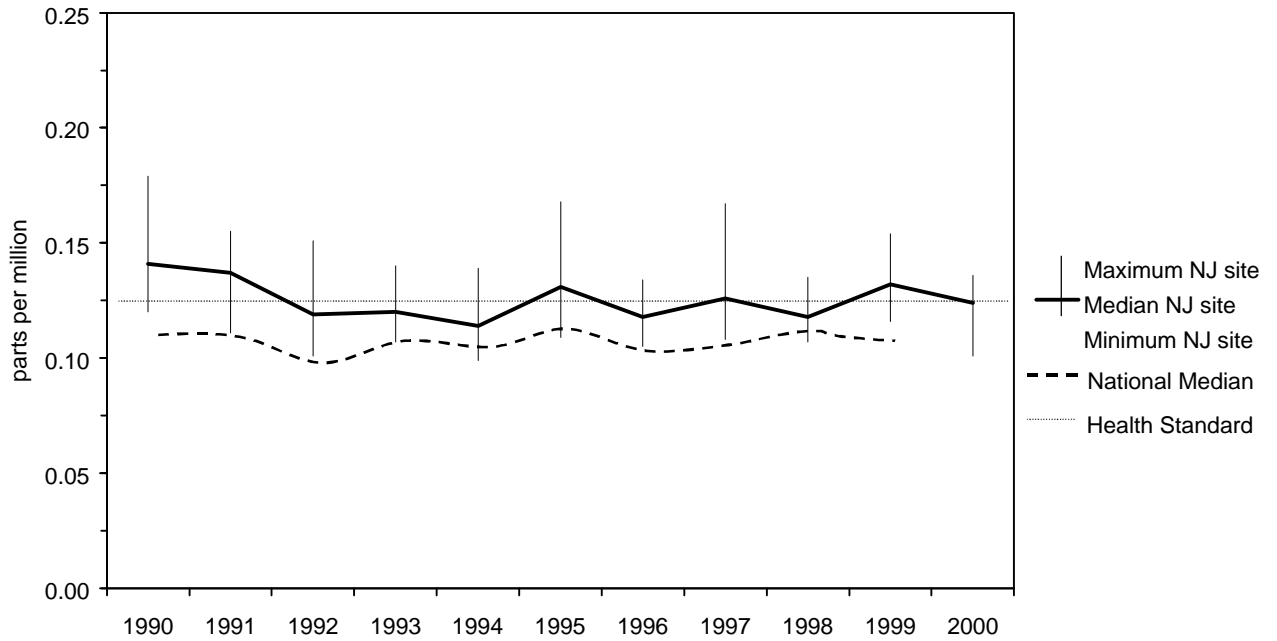


Figure 10b. 2000 Ozone Concentrations in New Jersey:
Highest and Second Highest Daily 1-Hour Averages

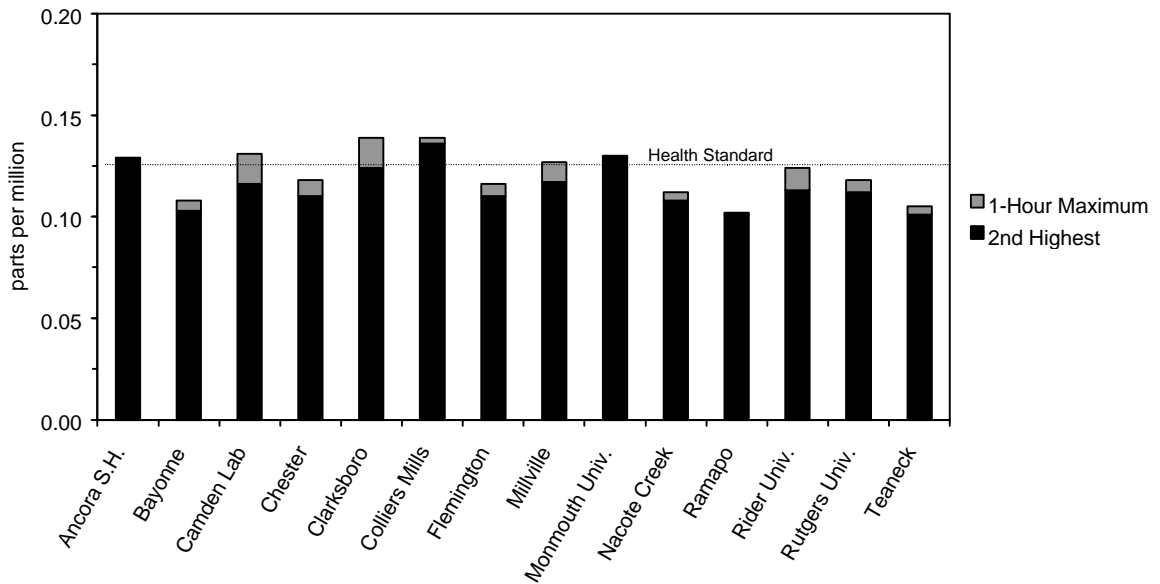


Figure 11. State of New Jersey
UATMP and PAMS Monitoring Network, 2000

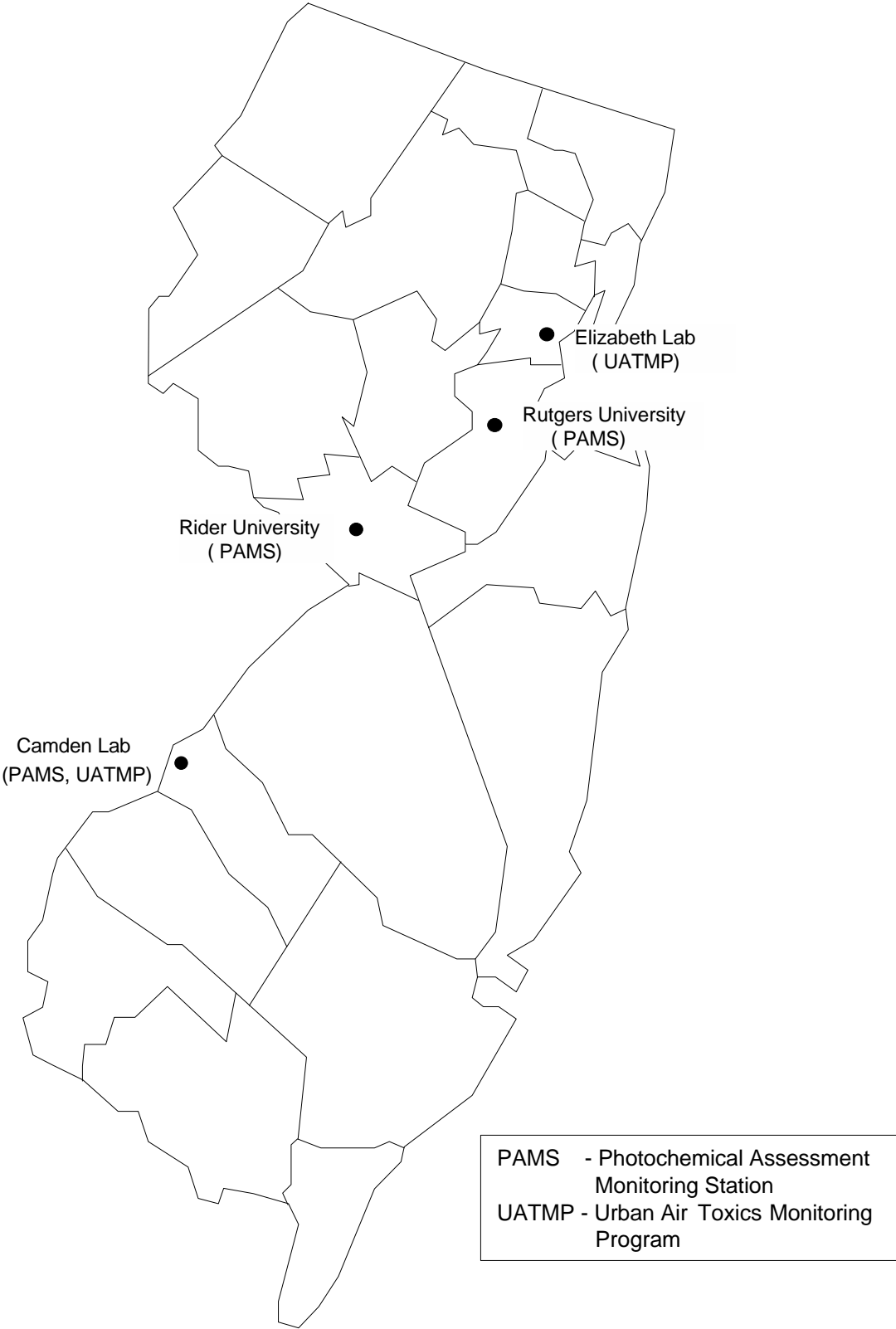


TABLE 11

SUMMARY OF URBAN AIR TOXICS DATA - 2000

PARTS PER BILLION (VOLUME)

| | Camden Lab | | Elizabeth Lab | |
|----------------------------|---------------------------|----------------|---------------------------|----------------|
| | <u>Annual Average</u> | <u>Maximum</u> | <u>Annual Average</u> | <u>Maximum</u> |
| Acetaldehyde | 1.85 | 4.58 | 1.35 | 3.50 |
| Acetone | 1.80 | 5.89 | 1.12 | 2.92 |
| Acetonitrile | 0.00 | 0.00 | 0.19 | 4.20 |
| Acetylene | 2.32 | 6.12 | 2.51 | 7.15 |
| Acrylonitrile | 0.00 | 0.00 | 0.01 | 0.07 |
| tert-Amyl Methyl Ether | 0.00 | 0.05 | 0.01 | 0.07 |
| Benzaldehyde | 0.10 | 0.27 | 0.08 | 0.32 |
| Benzene | 0.61 | 1.56 | 0.62 | 1.40 |
| Bromochloromethane | 0.00 | 0.00 | 0.00 | 0.00 |
| Bromodichloromethane | 0.00 | 0.00 | 0.00 | 0.00 |
| Bromoform | 0.00 | 0.00 | 0.00 | 0.00 |
| Bromomethane | 0.02 | 0.34 | 0.00 | 0.00 |
| 1,3-Butadiene | 0.05 | 0.34 | 0.09 | 0.31 |
| Butyr/Isobutyraldehyde | 0.27 | 0.48 | 0.24 | 0.57 |
| Carbon Tetrachloride | 0.05 | 0.10 | 0.04 | 0.12 |
| Chlorobenzene | 0.00 | 0.00 | 0.00 | 0.00 |
| Chloroethane | 0.00 | 0.00 | 0.00 | 0.00 |
| Chloroform | 0.00 | 0.00 | 0.00 | 0.04 |
| Chloromethane | 0.69 | 1.02 | 0.61 | 0.81 |
| Chloromethylbenzene | 0.00 | 0.00 | 0.00 | 0.00 |
| Chloroprene | 0.00 | 0.00 | 0.00 | 0.00 |
| Crotonaldehyde | 0.02 | 0.21 | 0.02 | 0.09 |
| Dibromochloromethane | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,2-Dibromoethane | 0.00 | 0.00 | 0.00 | 0.00 |
| m-Dichlorobenzene | 0.00 | 0.00 | 0.00 | 0.00 |
| o-Dichlorobenzene | 0.00 | 0.00 | 0.00 | 0.00 |
| p-Dichlorobenzene | 0.03 | 0.25 | 0.01 | 0.07 |
| 1,1-Dichloroethane | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,1-Dichloroethene | 0.00 | 0.00 | 0.00 | 0.00 |
| cis-1,2-Dichloroethylene | 0.00 | 0.00 | 0.01 | 0.15 |
| trans-1,2-Dichloroethylene | 0.00 | 0.00 | 0.00 | 0.00 |
| Dichlorodifluoromethane | 0.65 | 0.95 | 0.69 | 0.87 |
| 1,2-Dichloroethane | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,2-Dichloropropane | 0.00 | 0.00 | 0.00 | 0.00 |
| cis-1,3-Dichloropropene | 0.00 | 0.00 | 0.00 | 0.00 |
| trans-1,3-Dichloropropene | 0.00 | 0.00 | 0.00 | 0.00 |
| Dichlorotetrafluoroethane | 0.00 | 0.03 | 0.00 | 0.04 |
| 2,5-Dimethylbenzaldehyde | 0.00 | 0.01 | 0.00 | 0.04 |
| Ethyl Acrylate | 0.00 | 0.00 | 0.00 | 0.00 |
| Ethylbenzene | 0.21 | 0.86 | 0.26 | 0.90 |
| Ethyl tert-Butyl Ether | 0.00 | 0.00 | 0.00 | 0.00 |
| Formaddehyde | 5.54 | 11.91 | 3.39 | 11.61 |
| Hexachloro-1,3-Butadiene | 0.00 | 0.00 | 0.00 | 0.00 |
| Hexaldehydes | 0.10 | 0.33 | 0.07 | 0.22 |
| Isovaleraldehyde | 0.04 | 0.30 | 0.03 | 0.18 |

TABLE 11 (CONT.)

SUMMARY OF URBAN AIR TOXICS DATA - 2000

PARTS PER BILLION (VOLUME)

| | Camden Lab | | Elizabeth Lab | |
|---------------------------|---------------------------|----------------|---------------------------|----------------|
| | <u>Annual Average</u> | <u>Maximum</u> | <u>Annual Average</u> | <u>Maximum</u> |
| Methylene Chloride | 0.09 | 0.29 | 0.27 | 0.77 |
| Methyl Ethyl Ketone | 0.79 | 1.44 | 0.96 | 2.60 |
| Methyl Isobutyl Keytone | 0.02 | 0.53 | 0.02 | 0.24 |
| Methyl Methacrylate | 0.00 | 0.00 | 0.00 | 0.03 |
| Methyl tert-Butyl Ether | 0.97 | 3.17 | 1.79 | 8.99 |
| n-Octane | 0.11 | 1.22 | 0.10 | 0.38 |
| Propionaldehyde | 0.21 | 0.63 | 0.19 | 0.50 |
| Propylene | 1.36 | 5.41 | 2.99 | 9.08 |
| Styrene | 0.04 | 0.31 | 0.05 | 0.43 |
| 1,1,2,2-Tetrachloroethane | 0.00 | 0.00 | 0.00 | 0.00 |
| Tetrachloroethylene | 0.02 | 0.28 | 0.04 | 0.16 |
| Toluadehydes | 0.04 | 0.20 | 0.04 | 0.11 |
| Toluene | 1.29 | 4.80 | 1.80 | 8.82 |
| 1,2,4-Trichlorobenzene | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,1,1-Trichloroethane | 0.01 | 0.09 | 0.02 | 0.06 |
| 1,1,2-Trichloroethane | 0.00 | 0.00 | 0.00 | 0.00 |
| Trichloroethylene | 0.01 | 0.11 | 0.01 | 0.11 |
| Trichlorofluoromethane | 0.31 | 0.41 | 0.29 | 0.36 |
| Trichlorotrifluoroethane | 0.06 | 0.12 | 0.08 | 0.40 |
| 1,2,4-Trimethylbenzene | 0.39 | 4.21 | 0.28 | 0.83 |
| 1,3,5-Trimethylbenzene | 0.13 | 1.47 | 0.09 | 0.27 |
| Valeraldehyde | 0.10 | 0.31 | 0.10 | 0.37 |
| Vinyl Chloride | 0.00 | 0.00 | 0.00 | 0.00 |
| m,p-Xylene | 0.62 | 3.03 | 0.70 | 2.50 |
| o-Xylene | 0.30 | 1.70 | 0.32 | 0.96 |

TABLE 12
SUMMARY OF PHOTOCHEMICAL ASSESSMENT MONITORING (PAMS) DATA
JUNE, JULY AND AUGUST, 2000

PARTS PER BILLION (VOLUME) - PPBV
PARTS PER BILLION (CARBON) - PPBC

MAX - MAXIMUM

AVG - AVERAGE

| | Camden Lab | | | | Rider University | | | | Rutgers University | | | |
|------------------------|------------|------|--------|-------|------------------|------|-------|------|--------------------|------|--------|------|
| | ppbv | | ppbc | | ppbv | | Ppbc | | ppbv | | Ppbc | |
| | Max | Avg | Max | Avg | Max | Avg | Max | Avg | Max | Avg | Max | Avg |
| Acetylene | 8.57 | 0.68 | 17.13 | 1.37 | 3.33 | 0.31 | 6.66 | 0.63 | 3.28 | 0.26 | 6.55 | 0.52 |
| Benzene | 2.75 | 0.31 | 16.47 | 1.87 | 1.87 | 0.16 | 11.22 | 0.94 | 1.08 | 0.17 | 6.45 | 0.99 |
| n-Butane | 46.73 | 1.58 | 186.90 | 6.34 | 6.88 | 0.42 | 27.50 | 1.67 | 4.84 | 0.56 | 19.37 | 2.24 |
| 1-Butene | 1.40 | 0.13 | 5.59 | 0.53 | 0.55 | 0.04 | 2.18 | 0.15 | 0.43 | 0.06 | 1.72 | 0.25 |
| cis-2-Butene | 2.23 | 0.07 | 8.92 | 0.28 | 0.34 | 0.02 | 1.34 | 0.06 | 0.45 | 0.04 | 1.79 | 0.16 |
| trans-2-Butene | 2.47 | 0.09 | 9.89 | 0.35 | 1.04 | 0.03 | 4.15 | 0.12 | 0.53 | 0.05 | 2.12 | 0.21 |
| Cyclohexane | 1.70 | 0.08 | 10.19 | 0.48 | 0.28 | 0.03 | 1.68 | 0.17 | 0.52 | 0.04 | 3.10 | 0.22 |
| Cyclopentane | 1.15 | 0.08 | 5.74 | 0.40 | 0.89 | 0.03 | 4.44 | 0.17 | 0.35 | 0.05 | 1.77 | 0.24 |
| n-Decane | 0.73 | 0.04 | 7.34 | 0.44 | 0.41 | 0.01 | 4.14 | 0.14 | 0.52 | 0.04 | 5.17 | 0.36 |
| m-Diethylbenzene | 0.13 | 0.01 | 1.27 | 0.09 | 0.57 | 0.01 | 5.68 | 0.08 | 0.41 | 0.01 | 4.08 | 0.12 |
| p-Diethylbenzene | 0.30 | 0.01 | 3.04 | 0.15 | 0.19 | 0.01 | 1.89 | 0.06 | 0.36 | 0.01 | 3.58 | 0.12 |
| 2,2-Dimethylbutane | 2.97 | 0.10 | 17.81 | 0.62 | 0.38 | 0.03 | 2.29 | 0.19 | 0.53 | 0.04 | 3.18 | 0.25 |
| 2,3-Dimethylbutane | 2.10 | 0.16 | 12.59 | 0.93 | 0.39 | 0.05 | 2.33 | 0.33 | 0.70 | 0.10 | 4.17 | 0.59 |
| 2,3-Dimethylpentane | 1.62 | 0.09 | 11.33 | 0.65 | 0.67 | 0.05 | 4.67 | 0.36 | 1.63 | 0.06 | 11.42 | 0.41 |
| 2,4-Dimethylpentane | 0.71 | 0.05 | 4.24 | 0.31 | 0.63 | 0.03 | 3.78 | 0.17 | 0.36 | 0.04 | 2.18 | 0.25 |
| Ethane | 27.60 | 3.45 | 55.20 | 6.90 | 8.44 | 1.90 | 16.88 | 3.79 | 14.00 | 2.72 | 28.00 | 5.43 |
| Ethylbenzene | 0.86 | 0.07 | 6.85 | 0.58 | 0.63 | 0.04 | 5.00 | 0.33 | 0.65 | 0.07 | 5.19 | 0.56 |
| Ethylene (Ethene) | 23.90 | 1.63 | 47.80 | 3.25 | 6.29 | 0.78 | 12.58 | 1.57 | 11.59 | 1.24 | 23.17 | 2.49 |
| m-Ethyltoluene | 0.91 | 0.06 | 8.22 | 0.50 | 0.56 | 0.02 | 5.08 | 0.18 | 0.73 | 0.05 | 6.59 | 0.45 |
| o-Ethyltoluene | 0.30 | 0.02 | 2.70 | 0.20 | 0.20 | 0.01 | 1.78 | 0.07 | 0.27 | 0.02 | 2.44 | 0.16 |
| p-Ethyltoluene | 0.36 | 0.02 | 3.28 | 0.14 | 0.27 | 0.01 | 2.45 | 0.07 | 0.36 | 0.03 | 3.24 | 0.30 |
| n-Heptane | 6.13 | 0.19 | 42.92 | 1.32 | 1.30 | 0.07 | 9.10 | 0.46 | 0.73 | 0.07 | 5.14 | 0.51 |
| Hexane | 4.82 | 0.36 | 28.92 | 2.15 | 1.94 | 0.16 | 11.61 | 0.93 | 4.11 | 0.15 | 24.66 | 0.90 |
| 1-Hexene | 0.42 | 0.03 | 2.52 | 0.15 | 0.45 | 0.01 | 2.70 | 0.06 | 0.23 | 0.01 | 1.35 | 0.06 |
| Isobutane | 26.98 | 1.10 | 107.93 | 4.41 | 5.01 | 0.34 | 20.05 | 1.36 | 8.48 | 0.45 | 33.92 | 1.80 |
| Isopentane | 36.78 | 1.85 | 183.92 | 9.23 | 4.34 | 0.58 | 21.71 | 2.89 | 11.21 | 0.86 | 56.07 | 4.31 |
| Isoprene | 1.59 | 0.19 | 7.95 | 0.97 | 1.68 | 0.18 | 8.40 | 0.90 | 3.59 | 0.53 | 17.95 | 2.67 |
| Isopropylbenzene | 11.09 | 0.05 | 99.80 | 0.45 | 0.26 | 0.01 | 2.31 | 0.07 | 0.16 | 0.01 | 1.46 | 0.12 |
| Methylcyclohexane | 2.32 | 0.12 | 16.21 | 0.84 | 0.76 | 0.04 | 5.31 | 0.29 | 0.71 | 0.05 | 4.99 | 0.36 |
| Methylcyclopentane | 2.23 | 0.18 | 13.36 | 1.07 | 0.74 | 0.07 | 4.46 | 0.42 | 0.70 | 0.09 | 4.22 | 0.53 |
| 2-Methylheptane | 0.56 | 0.04 | 4.48 | 0.32 | 0.30 | 0.01 | 2.39 | 0.11 | 0.28 | 0.02 | 2.24 | 0.19 |
| 3-Methylheptane | 0.51 | 0.05 | 4.05 | 0.39 | 0.33 | 0.02 | 2.60 | 0.13 | 0.23 | 0.03 | 1.83 | 0.20 |
| 2-Methylhexane | 2.03 | 0.15 | 14.24 | 1.05 | 1.22 | 0.07 | 8.56 | 0.49 | 0.59 | 0.08 | 4.10 | 0.53 |
| 3-Methylhexane | 4.60 | 0.19 | 32.23 | 1.36 | 1.71 | 0.09 | 11.95 | 0.62 | 0.79 | 0.09 | 5.54 | 0.64 |
| 2-Methylpentane | 5.64 | 0.48 | 33.84 | 2.89 | 1.26 | 0.17 | 7.56 | 1.01 | 2.05 | 0.23 | 12.29 | 1.38 |
| 3-Methylpentane | 3.09 | 0.31 | 18.52 | 1.84 | 0.85 | 0.11 | 5.12 | 0.67 | 1.27 | 0.15 | 7.64 | 0.90 |
| n-Nonane | 0.53 | 0.04 | 4.78 | 0.40 | 0.47 | 0.01 | 4.23 | 0.13 | 0.33 | 0.03 | 2.99 | 0.29 |
| n-Octane | 1.00 | 0.07 | 8.01 | 0.58 | 0.27 | 0.02 | 2.19 | 0.19 | 0.50 | 0.04 | 4.01 | 0.34 |
| n-Pentane | 16.27 | 0.89 | 81.34 | 4.44 | 3.29 | 0.27 | 16.47 | 1.37 | 4.20 | 0.45 | 21.02 | 2.24 |
| 1-Pentene | 1.26 | 0.07 | 6.31 | 0.35 | 0.60 | 0.02 | 3.00 | 0.12 | 0.33 | 0.04 | 1.67 | 0.21 |
| cis-2-Pentene | 1.37 | 0.04 | 6.83 | 0.21 | 0.19 | 0.01 | 0.95 | 0.05 | 0.32 | 0.03 | 1.60 | 0.14 |
| trans-2-Pentene | 2.53 | 0.09 | 12.64 | 0.44 | 0.36 | 0.02 | 1.81 | 0.09 | 0.59 | 0.05 | 2.96 | 0.25 |
| Propane | 106.30 | 3.52 | 318.91 | 10.57 | 13.05 | 1.31 | 39.14 | 3.92 | 18.35 | 1.54 | 55.06 | 4.63 |
| n-Propylbenzene | 0.21 | 0.01 | 1.89 | 0.13 | 0.18 | 0.01 | 1.60 | 0.07 | 0.21 | 0.02 | 1.86 | 0.14 |
| Propylene (Propene) | 15.36 | 0.87 | 46.07 | 2.62 | 3.21 | 0.32 | 9.64 | 0.96 | 4.01 | 0.41 | 12.04 | 1.23 |
| Styrene | 0.47 | 0.02 | 3.73 | 0.15 | 0.26 | 0.02 | 2.06 | 0.16 | 0.17 | 0.02 | 1.36 | 0.19 |
| Toluene | 8.31 | 0.79 | 58.16 | 5.54 | 5.44 | 0.40 | 38.08 | 2.83 | 19.84 | 0.89 | 138.85 | 6.20 |
| 1,2,3-Trimethylbenzene | 0.82 | 0.04 | 7.42 | 0.38 | 0.37 | 0.03 | 3.34 | 0.26 | 0.65 | 0.07 | 5.83 | 0.64 |
| 1,2,4-Trimethylbenzene | 1.32 | 0.08 | 11.91 | 0.74 | 0.88 | 0.04 | 7.91 | 0.39 | 1.09 | 0.07 | 9.83 | 0.61 |
| 1,3,5-Trimethylbenzene | 0.50 | 0.03 | 4.48 | 0.25 | 0.38 | 0.01 | 3.43 | 0.11 | 0.44 | 0.03 | 3.92 | 0.26 |
| 2,2,4-Trimethylpentane | 2.36 | 0.27 | 18.91 | 2.19 | 3.35 | 0.12 | 26.80 | 0.94 | 2.44 | 0.16 | 19.51 | 1.29 |
| 2,3,4-Trimethylpentane | 0.78 | 0.08 | 6.20 | 0.63 | 1.07 | 0.03 | 8.55 | 0.27 | 0.37 | 0.05 | 2.93 | 0.42 |
| n-Undecane | 0.54 | 0.02 | 5.91 | 0.27 | 0.31 | 0.01 | 3.42 | 0.13 | 0.31 | 0.02 | 3.43 | 0.25 |
| m/p-Xylene | 3.60 | 0.23 | 28.77 | 1.88 | 2.04 | 0.11 | 16.30 | 0.89 | 2.68 | 0.22 | 21.47 | 1.77 |
| o-Xylene | 1.12 | 0.09 | 8.99 | 0.73 | 0.79 | 0.05 | 6.35 | 0.36 | 0.89 | 0.08 | 7.11 | 0.65 |

TABLE 13

PAMS CARBONYLS
PARTS PER BILLION (VOLUME)

CAMDEN LAB
JUNE, JULY AND AUGUST, 2000

27 SAMPLING DATES (216 OBSERVATIONS)

| | <u># Of</u> <u>Non-Detects</u> | <u>Maximum</u> | <u>Average</u> |
|--------------------------|-----------------------------------|----------------|----------------|
| Acetaldehyde | 0 | 3.90 | 1.22 |
| Acetone | 0 | 11.97 | 3.13 |
| Benzaldehyde | 1 | 0.37 | 0.07 |
| Butyr/Isobutyraldehyde | 22 | 2.41 | 0.37 |
| Crotonaldehyde | 184 | 0.26 | 0.01 |
| 2,5-Dimethylbenzaldehyde | 215 | 0.00 | 0.00 |
| Formaldehyde | 0 | 6.79 | 3.04 |
| Hexaldehyde | 86 | 0.80 | 0.05 |
| Isovaleraldehyde | 134 | 0.59 | 0.08 |
| Propionaldehyde | 113 | 0.40 | 0.05 |
| Tolualdehyde | 48 | 0.25 | 0.05 |
| Valeraldehyde | 90 | 0.32 | 0.04 |

AVERAGES BY SAMPLING HOURS

| | <u>12AM-3AM</u> | <u>3AM-6AM</u> | <u>6AM-9AM</u> | <u>9AM-12PM</u> | <u>12PM-3PM</u> | <u>3PM-6PM</u> | <u>6PM-9PM</u> | <u>9PM-12AM</u> |
|--------------------------|-----------------|----------------|----------------|-----------------|-----------------|----------------|----------------|-----------------|
| Acetaldehyde | 1.22 | 1.08 | 1.10 | 1.37 | 1.49 | 1.31 | 1.12 | 1.10 |
| Acetone | 3.13 | 3.13 | 2.90 | 3.02 | 3.35 | 3.43 | 3.10 | 2.98 |
| Benzaldehyde | 0.08 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 |
| Butyr/Isobutyraldehyde | 0.39 | 0.39 | 0.40 | 0.39 | 0.34 | 0.35 | 0.32 | 0.37 |
| Crotonaldehyde | 0.02 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 |
| 2,5-Dimethylbenzaldehyde | 0.00 | ND | ND | ND | ND | ND | ND | ND |
| Formaldehyde | 2.83 | 2.41 | 2.50 | 3.08 | 3.47 | 3.53 | 3.50 | 2.97 |
| Hexaldehydes | 0.04 | 0.04 | 0.05 | 0.04 | 0.04 | 0.07 | 0.05 | 0.05 |
| Isovaleraldehyde | 0.08 | 0.05 | 0.07 | 0.09 | 0.10 | 0.08 | 0.08 | 0.06 |
| Propionaldehyde | 0.06 | 0.05 | 0.06 | 0.05 | 0.04 | 0.04 | 0.02 | 0.06 |
| Tolualdehydes | 0.05 | 0.05 | 0.04 | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 |
| Valeraldehyde | 0.04 | 0.03 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 | 0.03 |

Figure 12. State of New Jersey
Nitrogen Oxides Monitoring Network, 2000

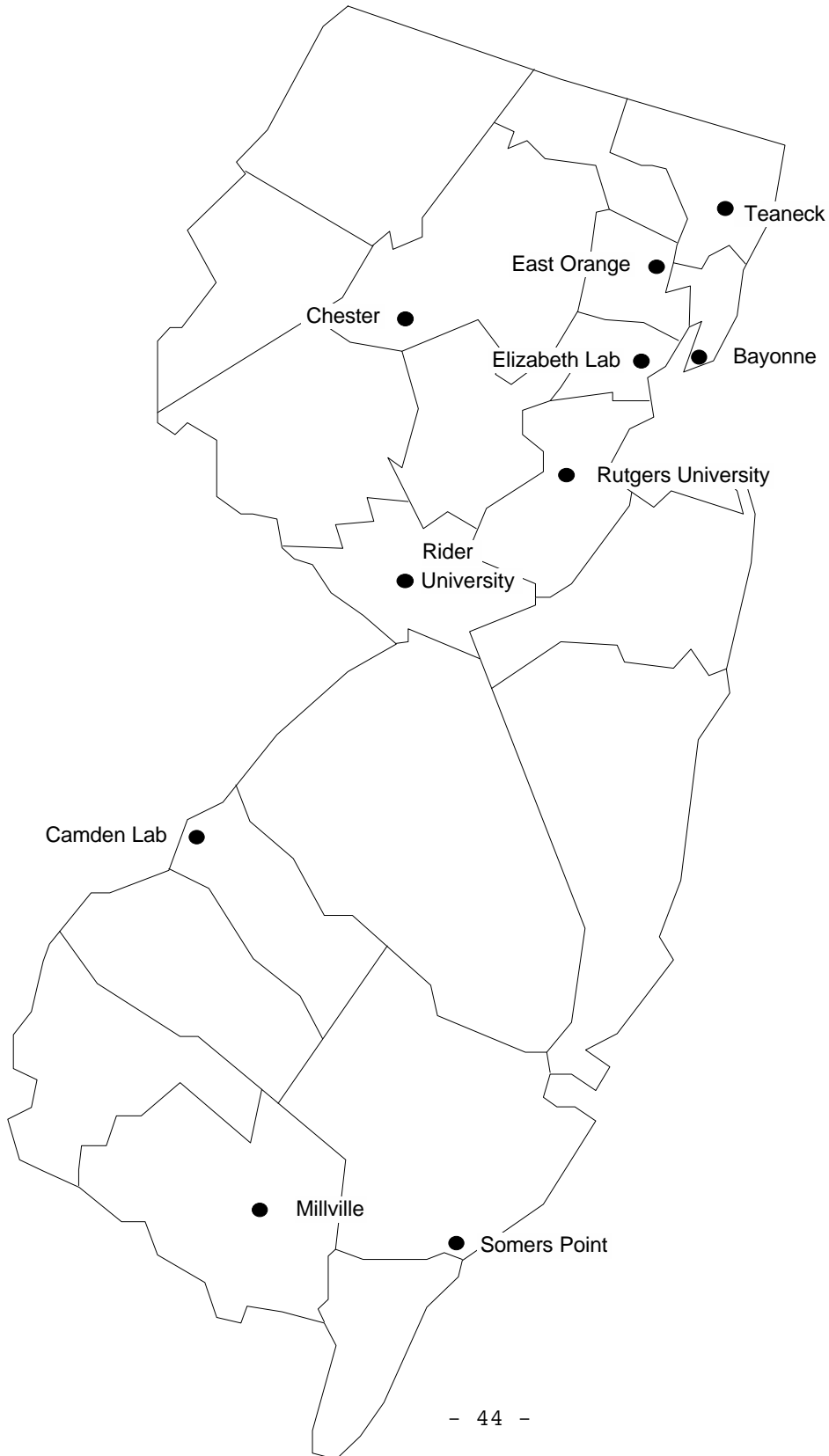


TABLE 14

AIR QUALITY IN NEW JERSEY
COMPARED WITH AIR QUALITY STANDARDS -- 2000

NITROGEN DIOXIDE & NITRIC OXIDE
PARTS PER MILLION

AMBIENT AIR QUALITY STANDARDS FOR NITROGEN DIOXIDE:
12-MONTH AVERAGE PRIMARY STANDARD: 100 ug/m³ (.05 ppm)^a
ANNUAL AVERAGE PRIMARY STANDARD: .053 ppm (100 ug/m³)^b
12-MONTH AVERAGE SECONDARY STANDARD: 100 ug/m³ (.05 ppm)^a
ANNUAL AVERAGE SECONDARY STANDARD: .053 ppm (100 ug/m³)^b
1-HOUR AVERAGE GUIDELINE: 470 ug/m³ (.25 ppm)^c

NO AMBIENT AIR QUALITY STANDARDS HAVE
BEEN ESTABLISHED FOR NITRIC OXIDE

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

VIOLATION CODES: XXX = NEW JERSEY AND NATIONAL, XX = NEW JERSEY
-- = NO VIOLATION

| Monitoring Site | Site Code | Nitrogen Dioxide | | Nitrogen Dioxide | | Viol. Code | Nitric Oxide Annual Avg. (ppm) |
|----------------------|-----------|------------------------------|-------------------------|--------------------------------|-----------|------------|--------------------------------|
| | | 1-Hour Average (ppm) Maximum | 2 nd Highest | 12-Month Average (ppm) Maximum | Cal. Year | | |
| Bayonne | N | .105 | .104 | .026 | .026 | -- | .020 |
| Camden Lab | S | .097 | .093 | .022 | .021 | -- | .017 |
| Chester | S | .064 | .058 | .011 | .011 | -- | .003 |
| East Orange | N | .103 | .089 | .030 | .029 | -- | .034 |
| Elizabeth Lab | S | .117 | .116 | .042 | .041 | -- | .054 |
| Millville | SPM | .073 | .072 | .016 | .016 | -- | .018 |
| Rider Univ. | SPM | .075 | .067 | .017 | .016 | -- | .014 |
| Rutgers Univ. | S | .095 | .092 | .019 | .019 | -- | .015 |
| Somers Point | SPM | .050 | .048 | .008 | .008 | -- | .005 |
| Teaneck ^d | SPM | .099 | .097 | - | - | -- | - |

a) New Jersey Ambient Air Quality Standard.

b) National Ambient Air Quality Standard.

c) California State Primary Standard used by New Jersey for analysis of short-term impacts in dispersion modeling studies.

d) Data not available prior to June 15th.

Figure 13a. Trend in Nitrogen Dioxide Concentrations in New Jersey, 1990-2000: Annual Averages

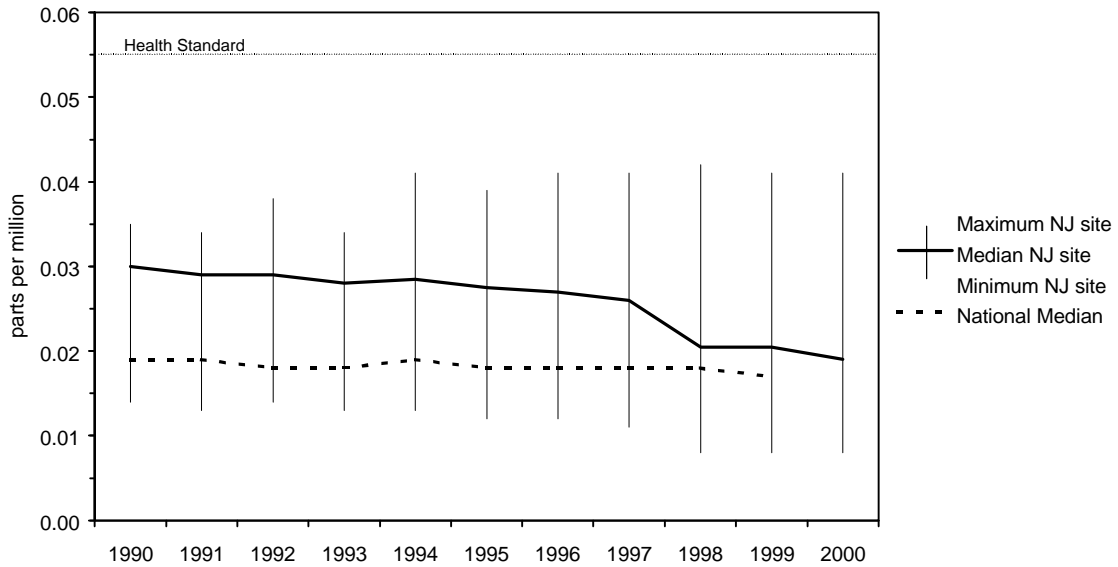


Figure 13b. 2000 Nitrogen Dioxide and Nitric Oxide Concentrations in New Jersey: Annual Averages

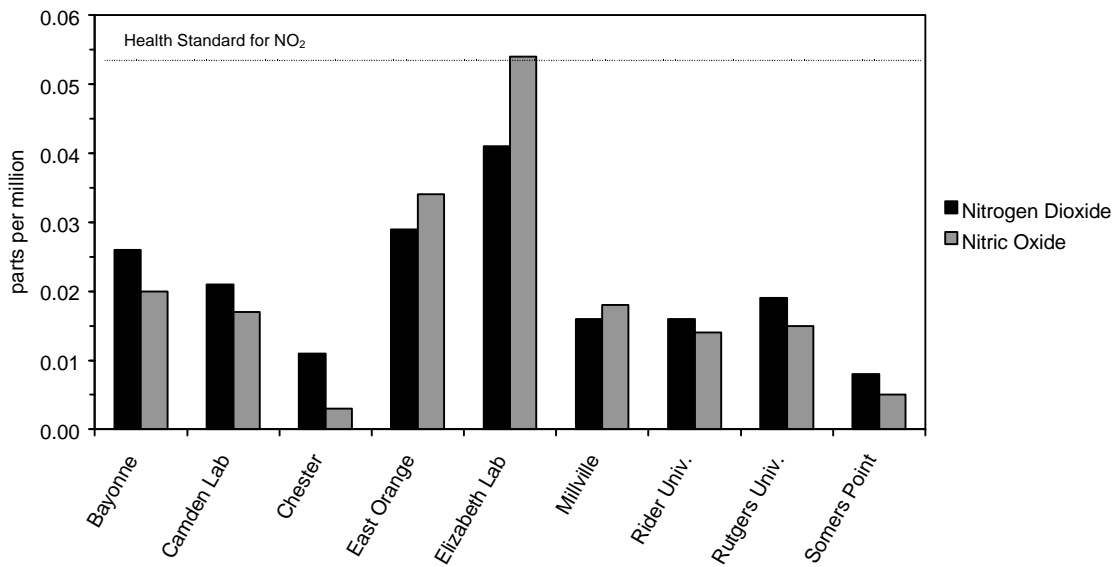


Figure 14. State of New Jersey
Lead Monitoring Network, 2000

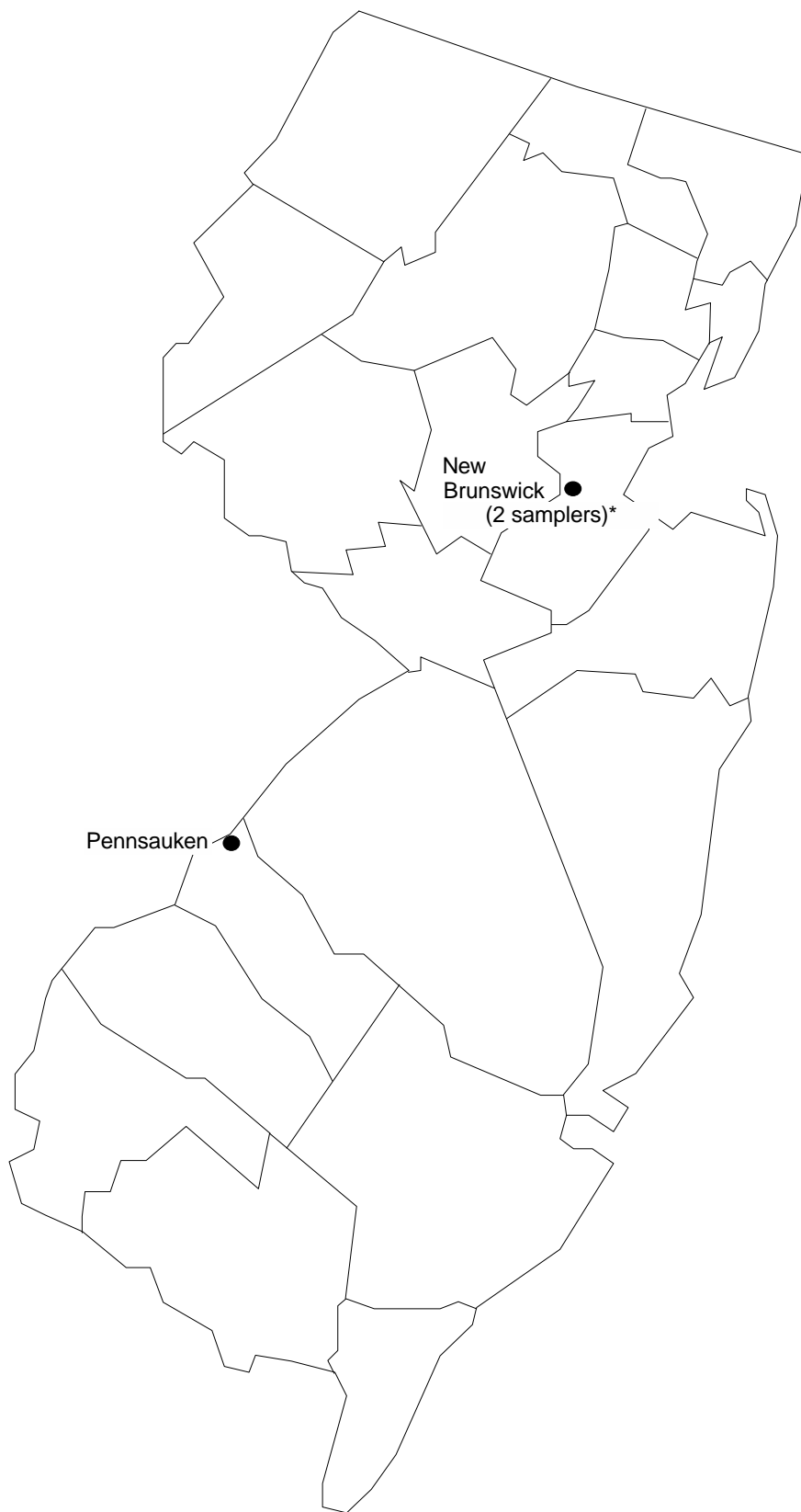


TABLE 15

AIR QUALITY IN NEW JERSEY
 COMPARED WITH AIR QUALITY STANDARDS -- 2000

LEAD

3-MONTH AVERAGES

MICROGRAMS PER CUBIC METER

HIGH VOLUME PARTICULATE SAMPLERS

AMBIENT AIR QUALITY STANDARDS FOR LEAD:

3-MONTH ARITH. MEAN PRIMARY & SECONDARY STANDARDS: 1.5 ug/m^{3a}

CALENDAR QUARTER ARITH. MEAN PRIMARY & SECONDARY STANDARD: 1.5 ug/m^{3b}

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING IND = INDUSTRIAL FACILITY

VIOLATION CODES: XXX = NEW JERSEY AND NATIONAL, XX = NEW JERSEY, -- = NO VIOLATION

| Monitoring Site | Sampler No. | Site Code | 3-Month Average Maximum | Average Month | Viol. Code | Arithmetic Means | | | | Viol. Code |
|-------------------------|-------------|-----------|-------------------------|---------------|------------|---------------------|---------------------|---------------------|---------------------|------------|
| | | | | | | 1 st Qtr | 2 nd Qtr | 3 rd Qtr | 4 th Qtr | |
| New Brunswick | 057 | S | .178 | Oct. | -- | .024 | .081 | .148 | .058 | -- |
| New Brunswick | 068 | SPM | .172 | Oct. | -- | .025 | .081 | .154 | .062 | -- |
| Pennsauken ^c | 071 | S | .015 | Sept. | -- | .012 | .008 | .015 | .007 | -- |

a) New Jersey Ambient Air Quality Standard

b) National Ambient Air Quality Standard

c) Less than 50 percent of samples above minimum detection limits

Figure 15a. Trend in Lead Concentrations in New Jersey, 1990-2000:
Maximum Quarterly Averages

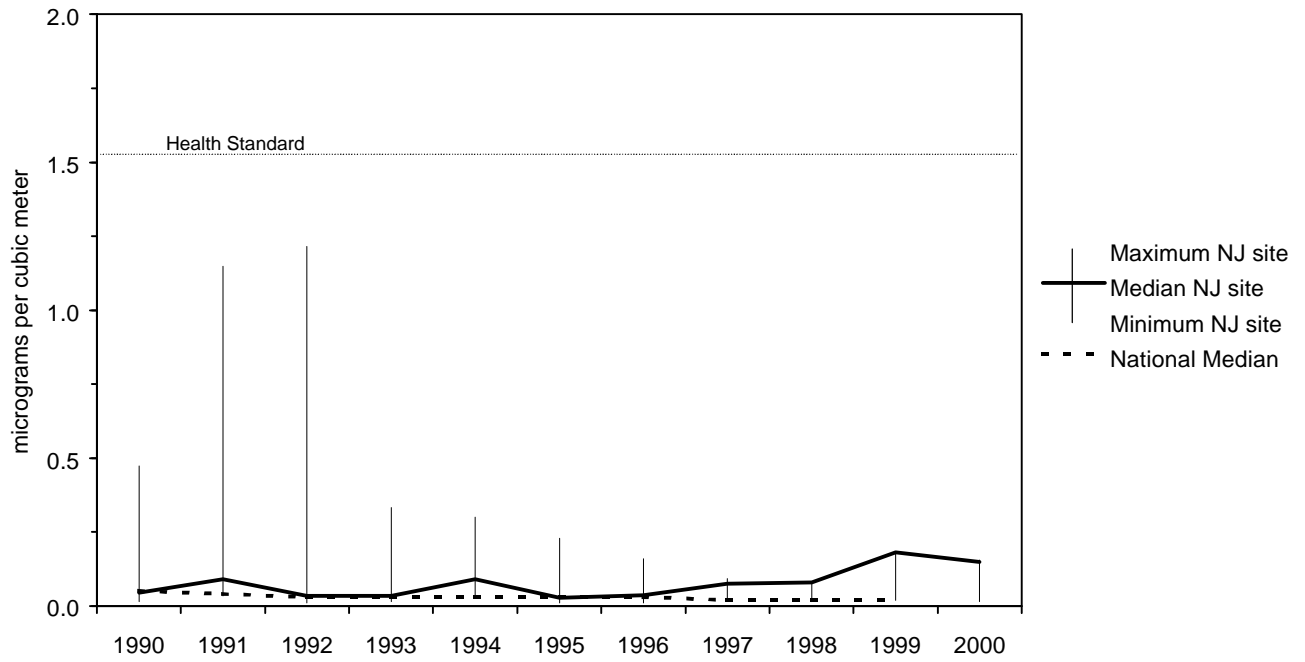


Figure 15b. 2000 Lead Concentrations in New Jersey:
Maximum Quarterly Averages

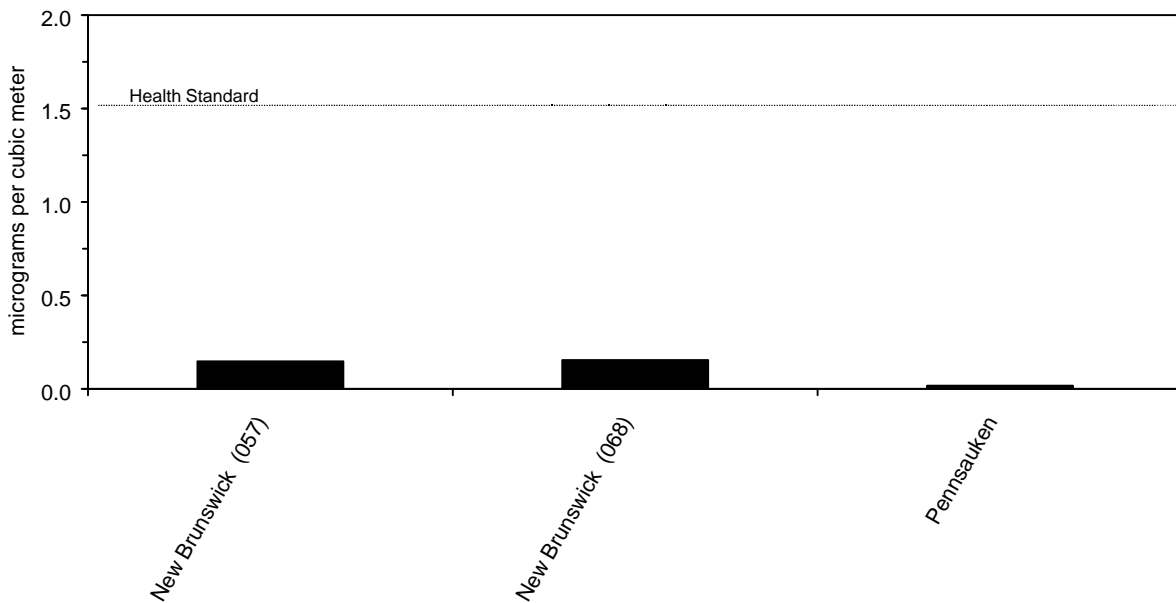


Figure 16. State of New Jersey
Smoke Shade Monitoring Network, 2000

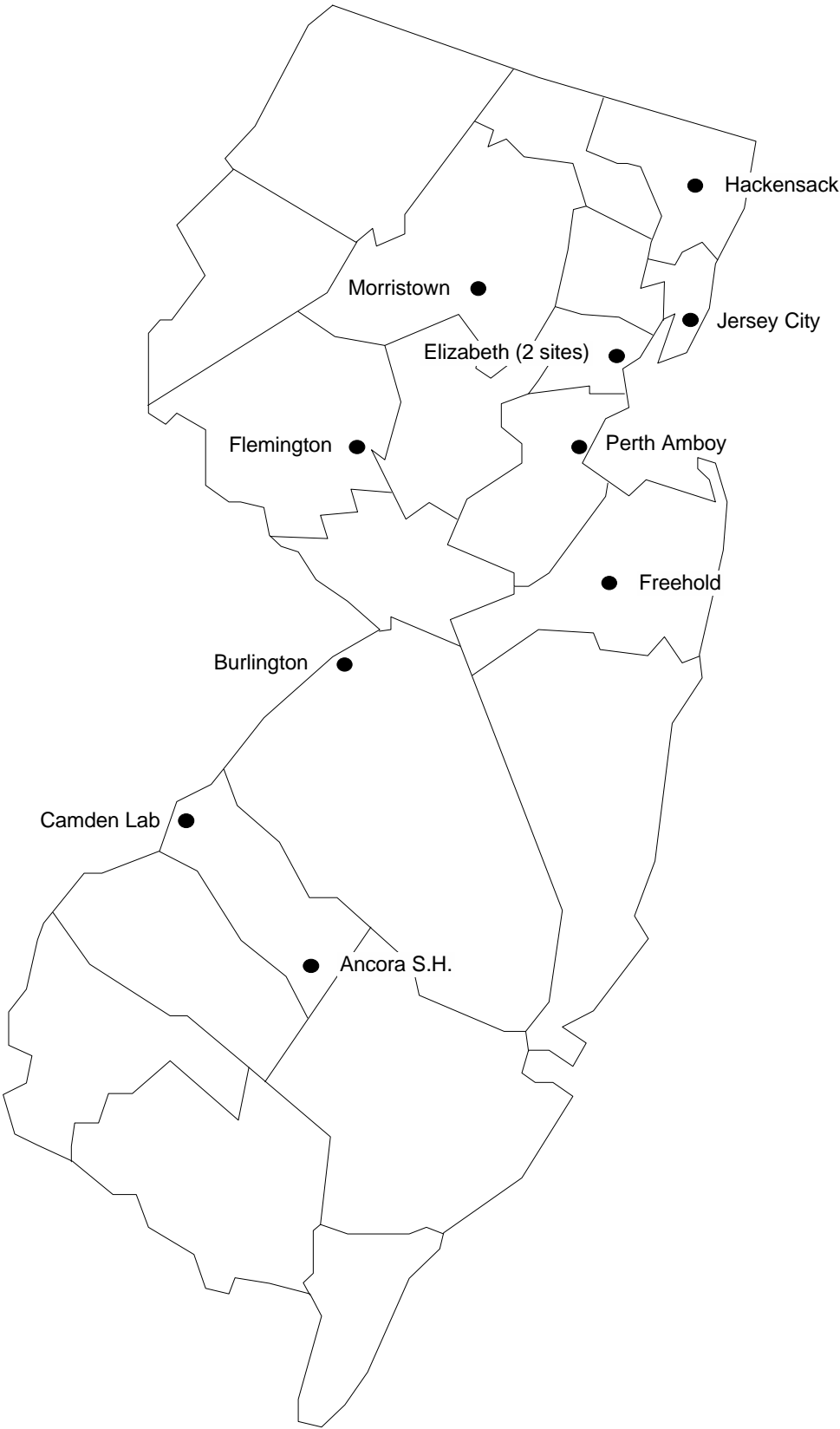


TABLE 16

AIR QUALITY IN NEW JERSEY
 COMPARED WITH AIR QUALITY STANDARDS -- 2000

SMOKE SHADE
 DAILY AND ANNUAL AVERAGES
 COEFFICIENT OF HAZE (COHS)

NO AMBIENT AIR QUALITY STANDARDS HAVE
 BEEN ESTABLISHED FOR SMOKE SHADE

SITE CODES: N = NAMS, S = SLAMS, SPM = SPECIAL PURPOSE MONITORING

| <u>Monitoring Site</u> | <u>Site Code</u> | <u>Daily Average (COHS)</u> | | <u>Annual Average (COHS)</u> |
|------------------------|------------------|-----------------------------|-------------------------------|------------------------------|
| | | <u>Maximum</u> | <u>2nd Highest</u> | |
| Ancora S.H. | SPM | 0.38 | 0.36 | 0.12 |
| Burlington | SPM | 0.95 | 0.67 | 0.21 |
| Camden Lab | SPM | 0.69 | 0.63 | 0.17 |
| Elizabeth | SPM | 1.72 | 1.39 | 0.41 |
| Elizabeth Lab | SPM | 1.64 | 1.21 | 0.41 |
| Flemington | SPM | 0.48 | 0.46 | 0.16 |
| Freehold | SPM | 0.78 | 0.69 | 0.25 |
| Hackensack | SPM | 0.97 | 0.92 | 0.24 |
| Jersey City | SPM | 1.95 | 1.80 | 0.55 |
| Morristown | SPM | 0.80 | 0.77 | 0.30 |
| Perth Amboy | SPM | 2.46 | 1.30 | 0.36 |

Figure 18a. 2000 Smoke Shade Measurements in New Jersey
Highest and Second Highest Daily Averages

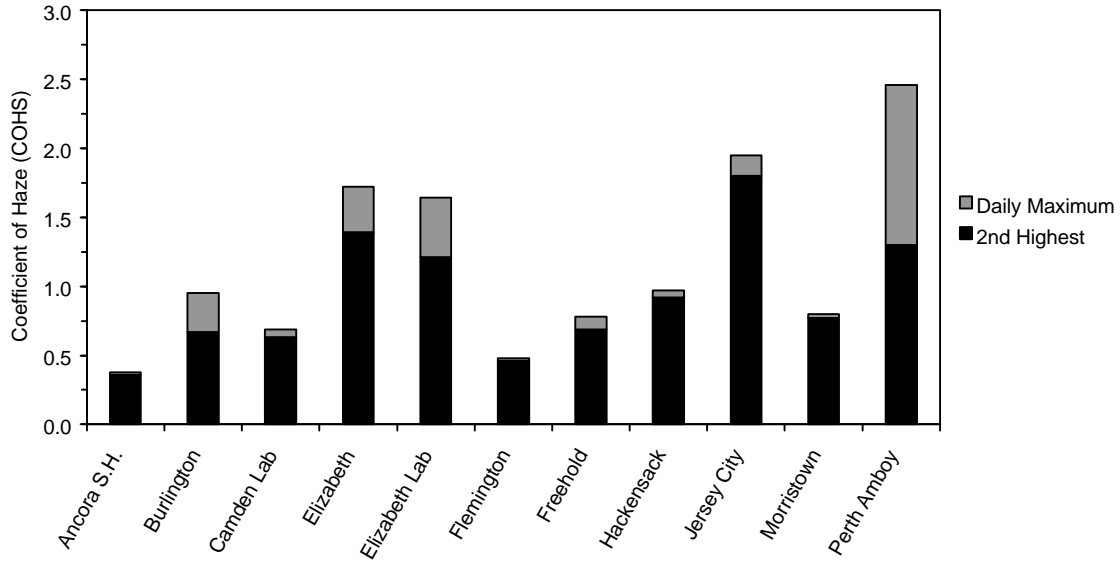


Figure 18b. 2000 Smoke Shade Measurements in New Jersey
Annual Averages

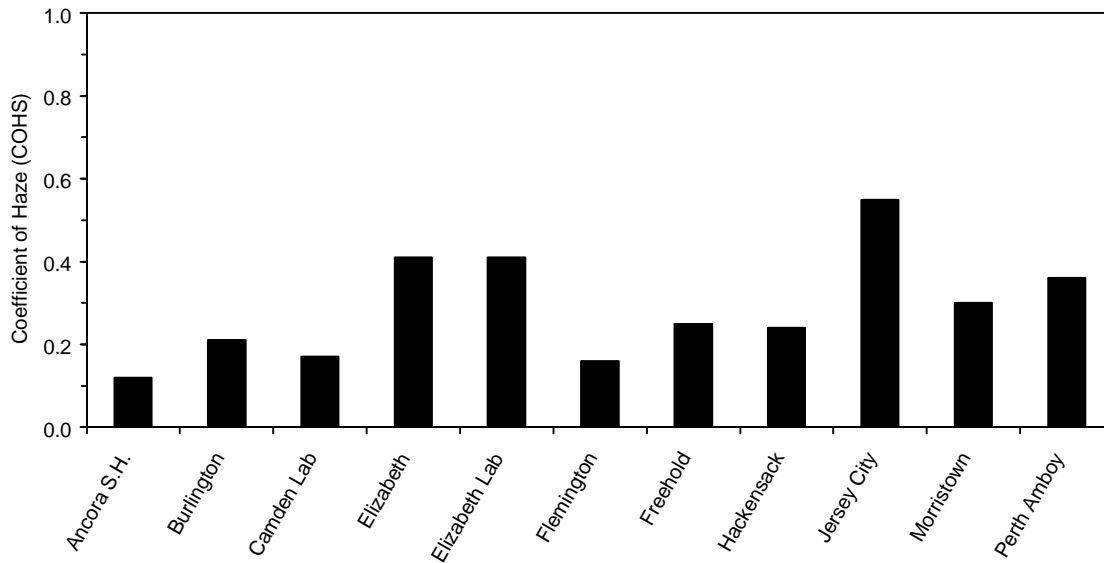


Figure 18. State of New Jersey
Acid Precipitation Monitoring Network, 2000

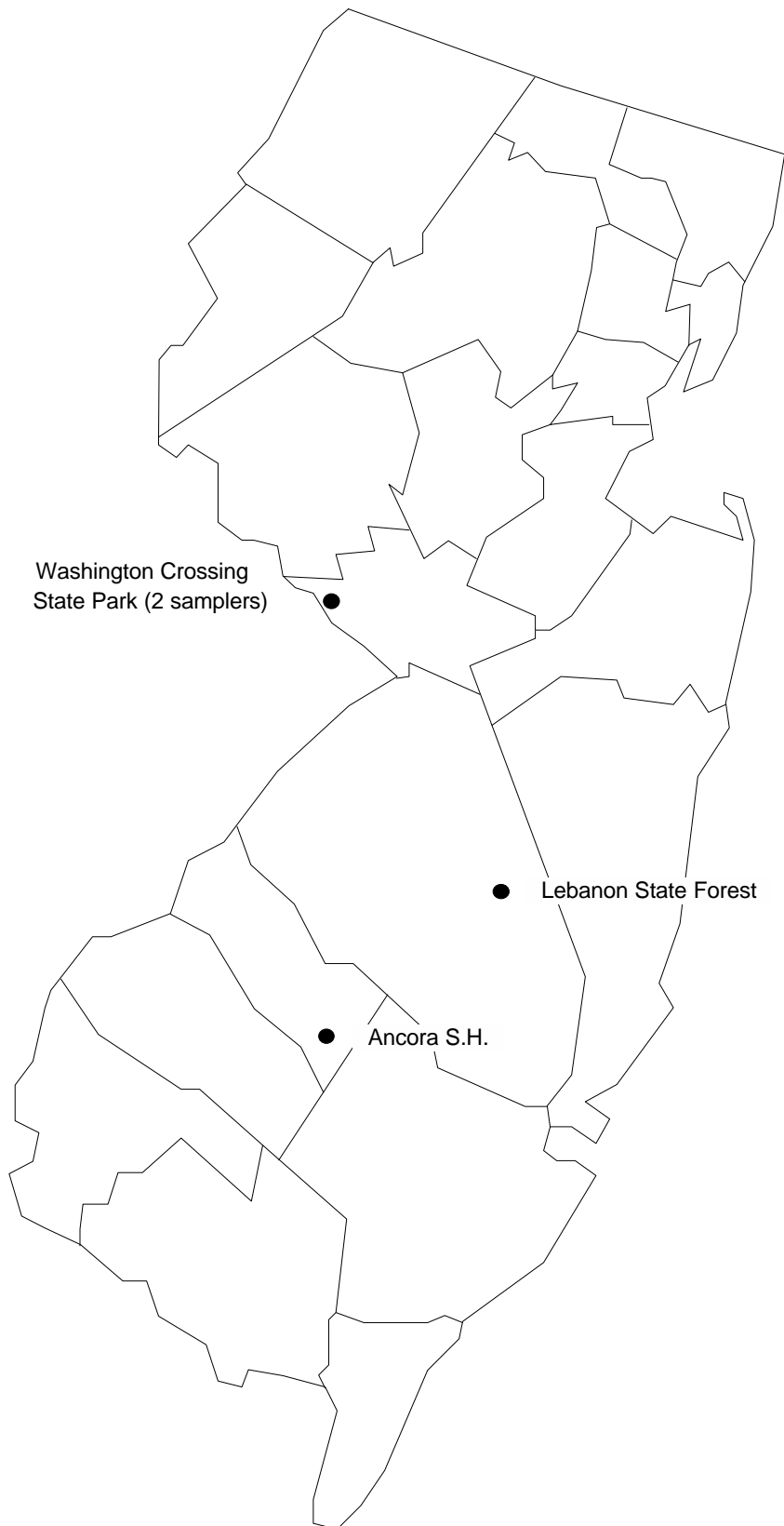


Table 17

2000 ACID PRECIPITATION MONITORING NETWORK
ANNUAL AND SEASONAL AVERAGES
WEIGHTED BY PRECIPITATION AMOUNT

Ancora State Hospital - Weekly

| | Precip. Inches | pH | Cond. us/cm | Ca ²⁺ mg/l | Mg ⁺ mg/l | K ⁺ mg/l | Na ⁺ mg/l | NH ₄ ⁻ mg/l | NO ₃ ⁻ mg/l | Cl ⁻ mg/l | SO ₄ ²⁻ mg/l | PO ₄ ³⁻ mg/l |
|--------|-------------------|------|----------------|--------------------------|-------------------------|------------------------|-------------------------|--------------------------------------|--------------------------------------|-------------------------|---------------------------------------|---------------------------------------|
| Winter | 11.06 | 4.71 | 12.6 | 0.087 | 0.038 | 0.018 | 0.257 | 0.130 | 0.781 | 0.404 | 1.152 | 0.025 |
| Spring | 8.57 | 4.33 | 29.7 | 0.184 | 0.042 | 0.033 | 0.176 | 0.529 | 2.145 | 0.351 | 2.621 | 0.025 |
| Summer | 16.83 | 4.33 | 27.3 | 0.062 | 0.023 | 0.012 | 0.139 | 0.307 | 1.438 | 0.304 | 2.284 | 0.025 |
| Fall | 6.21 | 4.60 | 18.9 | 0.078 | 0.072 | 0.026 | 0.496 | 0.188 | 1.140 | 0.870 | 1.353 | 0.025 |
| Annual | 42.67 | 4.43 | 22.7 | 0.095 | 0.038 | 0.020 | 0.229 | 0.289 | 1.366 | 0.422 | 1.922 | 0.025 |

Lebanon State Forest - Weekly

| | Precip. Inches | pH | Cond. us/cm | Ca ²⁺ mg/l | Mg ⁺ mg/l | K ⁺ mg/l | Na ⁺ mg/l | NH ₄ ⁻ mg/l | NO ₃ ⁻ mg/l | Cl ⁻ mg/l | SO ₄ ²⁻ mg/l | PO ₄ ³⁻ mg/l |
|--------|-------------------|------|----------------|--------------------------|-------------------------|------------------------|-------------------------|--------------------------------------|--------------------------------------|-------------------------|---------------------------------------|---------------------------------------|
| Winter | 9.03 | 4.52 | 19.5 | 0.123 | 0.052 | 0.028 | 0.425 | 0.189 | 1.503 | 0.678 | 1.408 | 0.025 |
| Spring | 9.18 | 4.26 | 36.7 | 0.253 | 0.066 | 0.068 | 0.338 | 0.659 | 2.650 | 0.621 | 3.312 | 0.037 |
| Summer | 15.89 | 4.38 | 24.9 | 0.047 | 0.024 | 0.014 | 0.166 | 0.212 | 1.293 | 0.329 | 1.991 | 0.025 |
| Fall | 0.73 | 3.93 | 65.0 | 0.155 | 0.032 | 0.046 | 0.215 | 0.661 | 3.841 | 0.374 | 4.684 | 0.025 |
| Annual | 34.83 | 4.36 | 27.4 | 0.123 | 0.042 | 0.032 | 0.280 | 0.333 | 1.758 | 0.497 | 2.245 | 0.028 |

Washington Crossing State Park - Weekly

| | Precip. Inches | pH | Cond. us/cm | Ca ²⁺ mg/l | Mg ⁺ mg/l | K ⁺ mg/l | Na ⁺ mg/l | NH ₄ ⁻ mg/l | NO ₃ ⁻ mg/l | Cl ⁻ mg/l | SO ₄ ²⁻ mg/l | PO ₄ ³⁻ mg/l |
|--------|-------------------|------|----------------|--------------------------|-------------------------|------------------------|-------------------------|--------------------------------------|--------------------------------------|-------------------------|---------------------------------------|---------------------------------------|
| Winter | 6.93 | 4.52 | 17.4 | 0.073 | 0.023 | 0.010 | 0.174 | 0.175 | 1.228 | 0.291 | 1.396 | 0.025 |
| Spring | 7.28 | 4.35 | 28.5 | 0.183 | 0.036 | 0.037 | 0.125 | 0.505 | 1.871 | 0.249 | 2.586 | 0.025 |
| Summer | 14.15 | 4.32 | 35.3 | 0.061 | 0.020 | 0.017 | 0.124 | 0.238 | 1.511 | 0.263 | 2.194 | 0.026 |
| Fall | 5.91 | 4.41 | 27.6 | 0.090 | 0.061 | 0.032 | 0.430 | 0.320 | 1.680 | 0.804 | 2.048 | 0.025 |
| Annual | 34.27 | 4.37 | 28.9 | 0.094 | 0.031 | 0.023 | 0.187 | 0.296 | 1.559 | 0.359 | 2.091 | 0.025 |

Washington Crossing State Park - Event

| | Precip. Inches | pH | Cond. us/cm | Ca ²⁺ mg/l | Mg ⁺ mg/l | K ⁺ mg/l | Na ⁺ mg/l | NH ₄ ⁻ mg/l | NO ₃ ⁻ mg/l | Cl ⁻ mg/l | SO ₄ ²⁻ mg/l | PO ₄ ³⁻ mg/l |
|--------|-------------------|------|----------------|--------------------------|-------------------------|------------------------|-------------------------|--------------------------------------|--------------------------------------|-------------------------|---------------------------------------|---------------------------------------|
| Winter | 8.60 | 4.51 | 18.2 | 0.071 | 0.023 | 0.011 | 0.186 | 0.138 | 1.204 | 0.323 | 1.184 | 0.001 |
| Spring | 8.65 | 4.32 | 30.0 | 0.196 | 0.036 | 0.050 | 0.130 | 0.462 | 2.076 | 0.239 | 2.732 | 0.002 |
| Summer | 16.99 | 4.38 | 24.3 | 0.053 | 0.018 | 0.010 | 0.111 | 0.162 | 1.325 | 0.238 | 1.845 | 0.001 |
| Fall | 6.15 | 4.49 | 23.1 | 0.068 | 0.044 | 0.020 | 0.384 | 0.198 | 1.389 | 0.665 | 1.622 | 0.002 |
| Annual | 40.39 | 4.40 | 24.0 | 0.090 | 0.027 | 0.021 | 0.172 | 0.227 | 1.470 | 0.321 | 1.861 | 0.002 |

LEGEND: Cond. = Specific conductance, Ca²⁺ = Calcium, Mg⁺ = Magnesium, K⁺ = Potassium,
Na⁺ = Sodium, NH₄ = Ammonium, NO₃⁻ = Nitrate, Cl⁻ = Chloride, SO₄²⁻ = Sulfate,
PO₄³⁻ = Phosphate.
us/cm = microSiemens per centimeter, mg/l = milligrams per liter.
Winter = Jan. - Mar.; Spring = Apr. - June; Summer = Jul. - Sept.; Fall = Oct. - Dec.

TABLE 18

ACID PRECIPITATION - COMPARISON WITH METEOROLOGY
SUMMARY OF 1999 ACID PRECIPITATION MONITORING BY THE
WASHINGTON CROSSING STATE PARK PRECIPITATION EVENT SAMPLER

ACID PRECIPITATION EVENTS BY SEASON¹

| | Winter | Spring | Summer | Fall |
|------------------------------|--------|--------|--------|------|
| Number of storm events | 10 | 11 | 13 | 9 |
| Total precipitation (inches) | 6.1 | 7.67 | 13.29 | 7.21 |
| Average acidity (pH) | 4.51 | 4.40 | 4.37 | 4.27 |

ACID PRECIPITATION EVENTS BY PRECIPITATION AMOUNT

| | Trace-.5" | 0.51-1.0" | 1.0-1.5" | 1.51-2.0" | >2.0" |
|------------------------|-----------|-----------|----------|-----------|-------|
| Number of storm events | 21 | 9 | 8 | 1 | 4 |
| Total precip. (inches) | 4.34 | 6.9 | 0.09 | 1.77 | 11.17 |
| Average acidity (pH) | 4.17 | 4.39 | 4.39 | 4.31 | 4.48 |

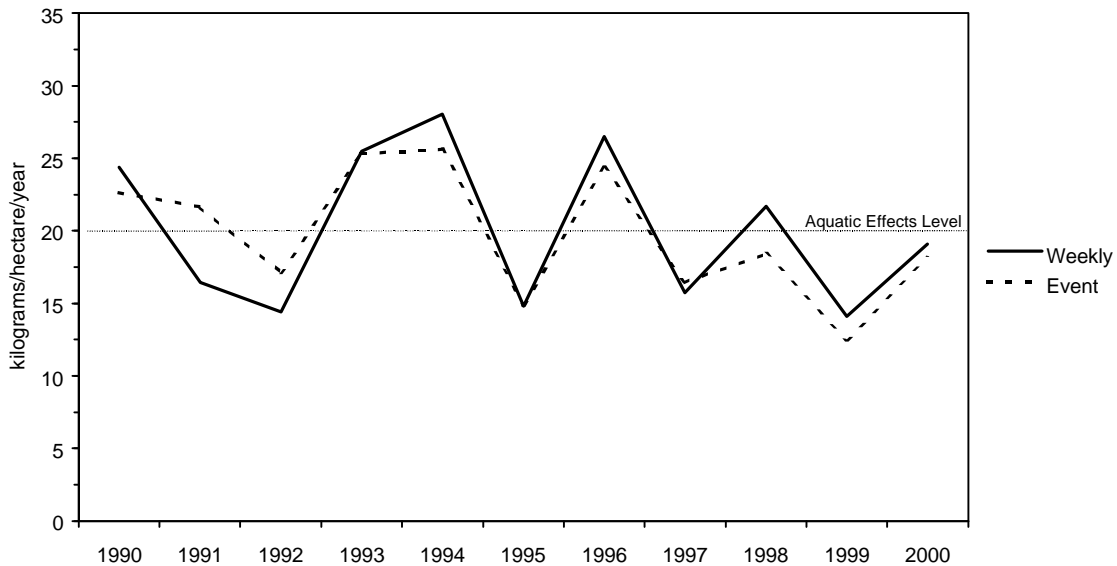
ACID PRECIPITATION EVENTS BY METEOROLOGICAL REGIME²

| | Midwest | South Central | Coastal | Local | Combination |
|--|---------|---------------|---------|-------|-------------|
| Number of storm events | 19 | 7 | 3 | 3 | 11 |
| Average inches of Precip. per storm | 0.48 | 0.56 | 1.66 | 0.68 | 1.29 |
| Total precip. (inches) | 9.10 | 3.93 | 4.97 | 2.04 | 14.23 |
| Average acidity (pH) | 4.22 | 4.33 | 4.78 | 4.78 | 4.37 |

Notes: ¹Seasons correspond to the following months: Winter = January through March; Spring = April through June; Summer = July through September; Fall = October through December.

²Meteorological regimes refer to general storm type and the direction from which storms originate or pass over before reaching New Jersey. The "Combination" regime refers to those events that could not be clearly classified and are considered to fall into one or more of the other categories.

Figure 19. Trend in Sulfate Deposition in Precipitation at Washington Crossing State Park, New Jersey, 1990-2000: Annual Loading



This figure shows the change in the amount of sulfate ion deposited over the last seventeen years at the acid precipitation monitoring site in Washington Crossing State Park, New Jersey. The figure shows "wet deposition" only; that is, it does not include dry particulate sulfate that was deposited when no precipitation was occurring. Therefore, total deposition is higher than what is shown.

The factors controlling the trend are the sulfate concentration in air and cloud droplets, and the total amount of precipitation in a given year. For example, in 1991 and 1992, both the sulfate concentrations and the total precipitation were below normal, while these values rebounded in 1993 and 1994. Since the values shown here are annual totals, they are sensitive to exclusion or loss of samples due to contamination.

Sulfate can alter soil and water chemistry, and a deposition level of 20 kilograms per hectare per year has been generally accepted as the limit above which damage to sensitive natural resources is likely to occur. However, there are no national or New Jersey standards for sulfate deposition.

Sulfate deposition in rain and snow is expressed as mass per unit land area. To convert the values shown above to pounds per acre per year, multiply by 0.89 (since one kilogram equals 2.21 pounds and one hectare equals 2.47 acres; a hectare has an area equivalent to a square that is 100 meters on a side).

Figure 20. State of New Jersey
Sulfates and Nitrates Monitoring Network, 2000

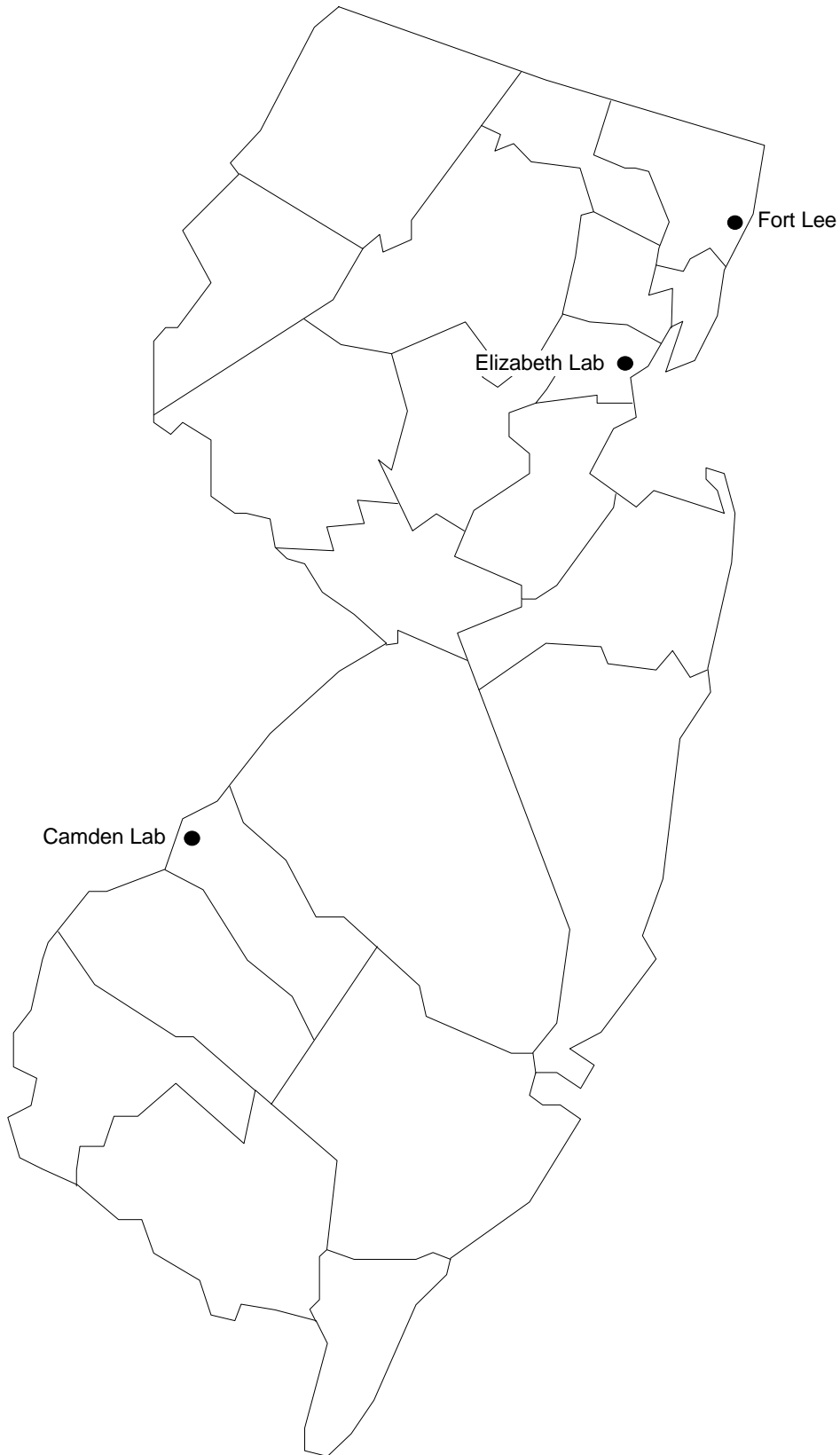


TABLE 19

AIR QUALITY IN NEW JERSEY COMPARED WITH AIR QUALITY STANDARDS - 2000
 ACID DEPOSITION PARTICULATE MATTER
 SULFATES AND NITRATES
 ANNUAL STATISTICS
 MICROGRAMS PER CUBIC METER
 NO AMBIENT AIR QUALITY STANDARDS HAVE BEEN ESTABLISHED FOR SULFATES AND NITRATES

| SAMPLING LOCATIONS | SITE # | N | PARTICULATES | | | SULFATES (SO4) | | | NITRATES (NO3) | | | SO4 & NO3 % OF PARTICULATES |
|-----------------------|-----------|----|--------------|-----|-----|----------------|------|-------|----------------|------|------|-----------------------------------|
| | | | MEAN | MIN | MAX | MEAN | MIN | MAX | MEAN | MIN | MAX | |
| Camden Lab | IP02 | 57 | 25.6 | 7 | 77 | 4.46 | 0.82 | 12.98 | 0.35 | 0.02 | 1.62 | 18.8 |
| Elizabeth Lab | IP28 | 58 | 35.1 | 12 | 156 | 5.00 | 0.77 | 14.24 | 0.71 | 0.03 | 2.78 | 16.3 |
| Fort Lee | IP14 | 60 | 36.4 | 7 | 86 | 4.59 | 0.56 | 14.65 | 0.54 | 0.03 | 2.34 | 14.1 |

N - Number of samples

Min - Minimum

Max - Maximum

Figure 21. State of New Jersey
Meteorological Monitoring Network, 2000

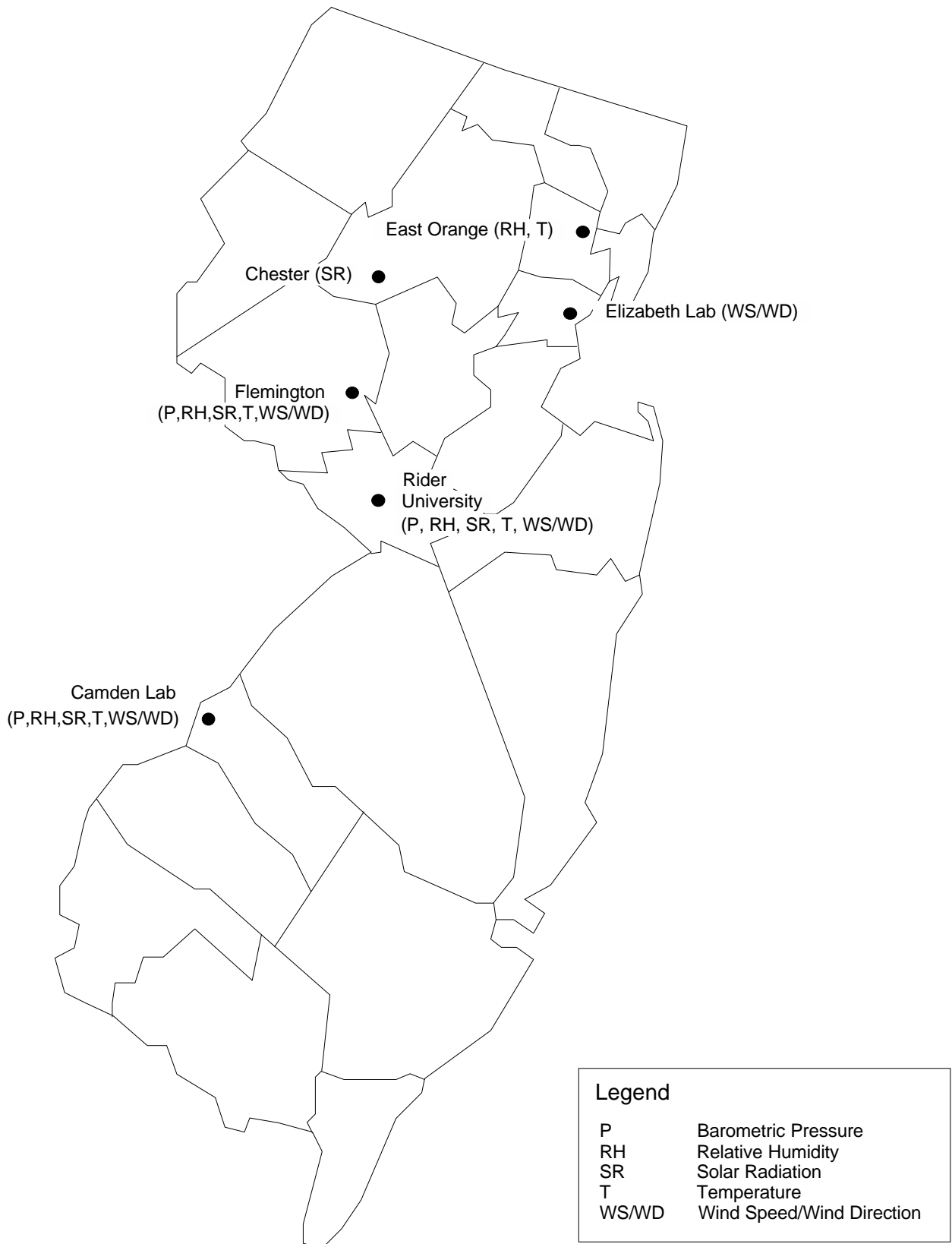


TABLE 20

SUMMARY OF METEOROLOGICAL MONITORING DATA - 2000
NORTHERN NEW JERSEY

| MONITORING SITES | | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | YEAR |
|--|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>East Orange/Elizabeth Lab And Chester</u> | | | | | | | | | | | | | | |
| Temperature: (°F) | Mean ¹ | 31/31 | 37/33 | 47/41 | 51/52 | 66/63 | 72/72 | 73/77 | 73/76 | 66/66 | 56/57 | 45/47 | 31/36 | 54/54 |
| | Min | 3 | 17 | 20 | 30 | 39 | 49 | 59 | 55 | 41 | 36 | 24 | 12 | 3 |
| | Max | 67 | 67 | 76 | 83 | 99 | 93 | 90 | 91 | 86 | 81 | 66 | 64 | 99 |
| Mean Wind: (mph, deg) | Speed | 3.7 | 3.2 | 3.5 | 3.5 | 2.8 | 2.9 | 2.4 | 2.4 | 2.6 | 2.5 | 3.2 | 3.7 | 3.0 |
| | Direction | 226 | 203 | 202 | 183 | 185 | 202 | 203 | 207 | 192 | 220 | 246 | 233 | 209 |
| Relative Humidity: (%) | Mean | 62 | 64 | 60 | 66 | 62 | 71 | 71 | 76 | 76 | 68 | 65 | 61 | 67 |
| | Min | 20 | 21 | 20 | 17 | 23 | 30 | 38 | 40 | 40 | 28 | 28 | 24 | 17 |
| | Max | 96 | 95 | 96 | 96 | 95 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Solar Radiation: (Langleys) | Mean | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| | Max | 0.8 | 1.1 | 1.3 | 1.5 | 1.5 | 1.4 | 1.5 | 1.5 | 1.4 | 1.2 | 0.9 | 0.8 | 1.5 |
| <u>Flemington</u> | | | | | | | | | | | | | | |
| Temperature: (°F) | Mean ² | 29/27 | 34/29 | 45/38 | 51/50 | 62/60 | 71/69 | 71/74 | 71/72 | 63/65 | 53/53 | 42/46 | 28/32 | 52/51 |
| | Min | 3 | 5 | 18 | 25 | 31 | 47 | 51 | 45 | 33 | 28 | 15 | 7 | 3 |
| | Max | 67 | 65 | 78 | 78 | 93 | 94 | 90 | 91 | 90 | 82 | 68 | 65 | 94 |
| Mean Wind: (mph, deg) | Speed | 4.4 | 3.3 | 3.7 | 3.6 | 2.6 | 2.6 | 1.8 | 1.7 | 2.0 | 2.1 | 3.5 | 4.1 | 3.0 |
| | Direction | 227 | 217 | 204 | 180 | 175 | 197 | 205 | 206 | 202 | 221 | 229 | 222 | 207 |
| Relative Humidity: (%) | Mean | 67 | 72 | 68 | 72 | 77 | 82 | 80 | 86 | 85 | 79 | 73 | 69 | 76 |
| | Min | 26 | 29 | 23 | 22 | 35 | 44 | 41 | 48 | 44 | 37 | 29 | 28 | 22 |
| | Max | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Solar Radiation: (Langleys) | Mean | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| | Max | 0.9 | 1.1 | 1.2 | 1.4 | 1.4 | 1.5 | 1.4 | 1.3 | 1.3 | 1.1 | 0.9 | 0.7 | 1.5 |
| Barometric Pressure (in of Hg) | Mean | 30.2 | 30.3 | 30.2 | 30.1 | 30.1 | 30.2 | 30.1 | 30.2 | 30.2 | 30.3 | 30.1 | 30.3 | 30.2 |
| | Min | 29.3 | 29.7 | 29.2 | 29.5 | 29.6 | 29.9 | 29.8 | 29.9 | 29.8 | 29.9 | 29.5 | 29.3 | 29.2 |
| | Max | 30.9 | 30.8 | 30.8 | 30.7 | 30.5 | 30.4 | 30.4 | 30.5 | 30.7 | 30.8 | 30.7 | 30.9 | 30.9 |

- 1) Newark Airport 30-year mean shown to the right of the slash.
2) Allentown, PA 30-year mean shown to the right of the slash.

TABLE 21

SUMMARY OF METEOROLOGICAL MONITORING DATA - 2000
CENTRAL AND SOUTHERN NEW JERSEY

| MONITORING SITES | | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | YEAR |
|-----------------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <u>Trenton (Rider University)</u> | | | | | | | | | | | | | | |
| Temperature: (°F) | Mean ³ | 30/31 | 36/33 | 46/42 | 51/53 | 62/63 | 70/72 | 71/77 | 71/75 | 64/68 | 54/57 | 43/46 | 29/36 | 52/54 |
| | Min | 6 | 15 | 23 | 30 | 35 | 49 | 51 | 50 | 38 | 34 | 19 | 10 | 6 |
| | Max | 68 | 65 | 77 | 76 | 91 | 92 | 88 | 90 | 86 | 81 | 65 | 65 | 92 |
| Mean Wind: (mph, deg) | Speed | 4.9 | 4.1 | 4.1 | 3.9 | 2.0 | 2.1 | 1.6 | 1.6 | 1.8 | 2.6 | 3.4 | 4.0 | 3.0 |
| | Direction | 243 | 238 | 216 | 196 | 187 | 200 | 183 | 191 | 197 | 237 | 256 | 246 | 216 |
| Relative Humidity: (%) | Mean | 72 | 75 | 69 | 73 | 75 | 80 | 79 | 85 | 86 | 80 | 75 | 72 | 77 |
| | Min | 30 | 30 | 24 | 21 | 35 | 46 | 43 | 49 | 46 | 37 | 31 | 29 | 21 |
| | Max | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Barometric Pressure: (in of Hg) | Mean | 30.2 | 30.3 | 30.2 | 30.1 | 30.1 | 30.1 | 30.1 | 30.2 | 30.2 | 30.3 | 30.1 | 30.3 | 30.2 |
| | Min | 29.3 | 29.6 | 29.3 | 29.3 | 29.3 | 29.9 | 29.8 | 29.9 | 29.8 | 29.9 | 29.6 | 29.4 | 29.3 |
| | Max | 30.9 | 30.8 | 31.0 | 30.7 | 30.5 | 30.4 | 30.4 | 30.5 | 30.6 | 30.8 | 30.7 | 30.9 | 31.0 |
| Solar Radiation (Langleys) | Mean | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| | Max | 0.9 | 1.1 | 1.2 | 1.4 | 1.4 | 1.4 | 1.4 | 1.3 | 1.2 | 1.1 | 0.9 | 0.8 | 1.4 |
| <hr/> | | | | | | | | | | | | | | |
| <u>Camden Lab</u> | | | | | | | | | | | | | | |
| Temperature: (°F) | Mean ³ | 33/31 | 38/33 | 49/42 | 53/53 | 65/63 | 73/72 | 74/77 | 74/75 | 67/68 | 58/57 | 46/46 | 32/36 | 55/54 |
| | Min | 9 | 20 | 25 | 32 | 43 | 52 | 62 | 58 | 45 | 39 | 26 | 13 | 9 |
| | Max | 68 | 67 | 79 | 77 | 91 | 93 | 90 | 91 | 86 | 83 | 67 | 65 | 93 |
| Mean Wind: (mph, deg) | Speed | 2.7 | 2.2 | 2.7 | 2.5 | 1.9 | 2.0 | 1.6 | 1.6 | 1.6 | 1.6 | 2.1 | 2.4 | 2.1 |
| | Direction | 220 | 204 | 198 | 177 | 174 | 190 | 167 | 176 | 186 | 198 | 235 | 224 | 196 |
| Relative Humidity: (%) | Mean | 68 | 72 | 64 | 73 | 74 | 79 | 77 | 82 | 81 | 76 | 70 | 69 | 74 |
| | Min | 22 | 28 | 19 | 20 | 33 | 46 | 36 | 45 | 46 | 38 | 32 | 30 | 19 |
| | Max | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Barometric Pressure: (in of Hg) | Mean | 30.4 | 30.4 | 30.3 | 30.3 | 30.2 | 30.3 | 30.3 | 30.3 | 30.3 | 30.4 | 30.3 | 30.5 | 30.3 |
| | Min | 29.4 | 29.8 | 29.4 | 29.7 | 29.7 | 30.0 | 30.0 | 30.1 | 29.9 | 30.1 | 29.7 | 29.6 | 29.4 |
| | Max | 31.0 | 30.9 | 31.0 | 30.9 | 30.7 | 30.5 | 30.5 | 30.7 | 30.8 | 31.0 | 31.8 | 31.1 | 31.1 |
| Solar Radiation: (Langleys) | Mean | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.2 |
| | Max | 0.8 | 1.0 | 1.2 | 1.3 | 1.3 | 1.4 | 1.4 | 1.3 | 1.2 | 1.0 | 0.8 | 0.7 | 1.4 |

3) Philadelphia 30 year mean shown to the right of the slash.

APPENDIX A
ANNUAL AIR QUALITY COMPARISON
1975 - 2000

SUMMARY OF 1975 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 5

Bayonne (14) Somerville (10)
Camden Lab (14) Asbury Park (8)
Ancora S.H. (12)

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 16

Morristown (267) Somerville (19)
Jersey City (172) Newark (16)
Elizabeth (126) Camden Lab (14)
Toms River (73) Paterson (12)
Burlington (48) Paulsboro (7)
Freehold (40) Asbury Park (3)
Atlantic City (30) Camden Lab (2)
Perth Amboy (30) Hackensack (2)

* No. of sites in compliance with the 8-hour standard: 6

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 5^b

Carteret (8) Roselle (3)
014 Jersey City (4) Middlesex (2)
Hackensack (3)

* No. of sites in compliance with the 24-hour standard: 64^a 59^b

* No. of sites not in compliance with the annual standard: 2

Carteret
014 Jersey City

* No. of sites in compliance with the annual standard: 62

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 4

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 0

* No. of sites in compliance with the quarterly standard: 0

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 22

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) In violation of a New Jersey standard (if different)
Number in parentheses () indicates number of violations

SUMMARY OF 1976 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 6

| | |
|------------------|------------------|
| Camden Lab (31) | Somerville (11) |
| Bayonne (25) | Asbury Park (10) |
| Ancora S.H. (15) | Trenton (6) |

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 15

| | |
|--------------------|-------------------|
| Jersey City (195) | Burlington (15) |
| Morristown (136) | Newark (12) |
| Elizabeth (100) | Paterson (11) |
| Toms River (73) | Camden Lab (7) |
| Perth Amboy (40) | Asbury Park (4) |
| Freehold (36) | Hackensack (4) |
| Atlantic City (24) | Elizabeth Lab (2) |
| Somerville (20) | |

* No. of sites in compliance with the 8-hour standard: 7

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 7^b

| | |
|---------------------|-----------------|
| 014 Jersey City (4) | Hoboken (2) |
| South Brunswick (3) | Jersey City (2) |
| Bayonne (2) | Roselle (2) |
| Carteret (2) | |

* No. of sites in compliance with the 24-hour standard: 73^a 66^b

* No. of sites not in compliance with the annual standard: 1

014 Jersey City

* No. of sites in compliance with the annual standard: 72

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 5

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 0

* No. of sites in compliance with the quarterly standard: 0

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 22

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) In violation of a New Jersey standard (if different)
 Number in parentheses () indicates number of violations

SUMMARY OF 1977 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 7

| | |
|------------------|-----------------|
| Sandy Hook (13) | Bayonne (6) |
| Somerville (13) | Chester (6) |
| Ancora S.H. (12) | Asbury Park (5) |
| Camden Lab (9) | |

* No. of sites in compliance with the 1-hour standard: 2

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 14

| | |
|------------------|-------------------|
| Morristown (102) | Paterson (7) |
| Elizabeth (78) | Perth Amboy (7) |
| Jersey City (72) | Newark (4) |
| Toms River (34) | Camden Lab (3) |
| Burlington (17) | Hackensack (3) |
| Freehold (12) | Asbury Park (2) |
| Somerville (9) | Atlantic City (2) |

* No. of sites in compliance with the 8-hour standard: 8

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 2^b

Camden (2)
Sayreville (2)

* No. of sites in compliance with the 24-hour standard: 85^a 83^b

* No. of sites not in compliance with the annual standard: 2

014 Jersey City
Camden

* No. of sites in compliance with the annual standard: 83

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 5

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 3

S57 Pedricktown (3)
N08 Paterson (2)
N04 Elizabeth (1)

* No. of sites in compliance with the quarterly standard: 9

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 22

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) In violation of a New Jersey standard (if different)
 Number in parentheses () indicates number of violations

SUMMARY OF 1978 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 8

| | |
|-----------------|-----------------|
| Sandy Hook (21) | Ancora S.H. (7) |
| Camden Lab (13) | Trenton (6) |
| Bayonne (12) | Chester (5) |
| Bivalve (11) | Somerville (4) |

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 11

| | |
|--------------------|----------------|
| Morristown (81) | Freehold (6) |
| Jersey City (36) | Paterson (6) |
| Elizabeth (35) | Paulsboro (3) |
| Toms River (29) | Somerville (3) |
| Atlantic City (10) | Hackensack (2) |
| Burlington (8) | |

* No. of sites in compliance with the 8-hour standard: 11

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 11^b

| | |
|---------------------|---------------------|
| 014 Jersey City (3) | 015 Jersey City (2) |
| Newark (3) | Kean College (2) |
| Bayonne (2) | Perth Amboy (2) |
| Camden (2) | Sayreville (2) |
| Carteret (2) | Sewaren (2) |
| Hoboken (2) | |

* No. of sites in compliance with the 24-hour standard: 89^a 78^b

* No. of sites not in compliance with the annual standard: 1

014 Jersey City

* No. of sites in compliance with the annual standard: 88

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 5

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 4

S57 Pedricktown (4)
014 Jersey City (1)
S41 Newark (1)
S45 Trenton (1)

* No. of sites in compliance with the quarterly standard: 6

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 20

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) In violation of a New Jersey standard (if different)
Number in parentheses () indicates number of violations

SUMMARY OF 1979 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 10

| | |
|-----------------|------------------|
| Sandy Hook (14) | Nacote Creek (4) |
| Camden Lab (8) | Somerville (4) |
| Bayonne (6) | Trenton (4) |
| Ancora S.H. (4) | Chester (3) |
| Asbury Park (4) | Vineland (3) |

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 14

| | |
|------------------|-------------------|
| Morristown (81) | Perth Amboy (8) |
| Jersey City (34) | Hackensack (7) |
| Elizabeth (29) | Toms River (7) |
| Freehold (13) | Atlantic City (6) |
| Paterson (13) | Camden Lab (5) |
| Somerville (10) | Asbury Park (3) |
| Burlington (9) | Newark (3) |

* No. of sites in compliance with the 8-hour standard: 10

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 8^b

| | |
|---------------------|-----------------|
| Bridgeton (4) | Sewaren (3) |
| Carteret (3) | West Orange (3) |
| 023 Perth Amboy (3) | Bayonne (2) |
| N09 Perth Amboy (3) | Camden (2) |

* No. of sites in compliance with the 24-hour standard: 92^a 84^b

* No. of sites not in compliance with the annual standard: 2

N08 Paterson
023 Perth Amboy

* No. of sites in compliance with the annual standard: 90

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 5

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 3

S57 Pedricktown (4)
S58 Pedricktown (1)
S41 Newark (1)

* No. of sites in compliance with the quarterly standard: 9

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 22

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) In violation of a New Jersey standard (if different)
 Number in parentheses () indicates number of violations

SUMMARY OF 1980 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 16

| | |
|--------------------|------------------|
| McGuire AFB (23) | Plainfield (11) |
| Trenton (19) | Bayonne (8) |
| Camden Lab (16) | East Orange (7) |
| Dumont (13) | Nacote Creek (6) |
| Sandy Hook (13) | Ancora S.H. (5) |
| New Brunswick (12) | Newark (5) |
| Chester (11) | Cape May (3) |
| Flemington (11) | Somerville (2) |

* No. of sites in compliance with the 1-hour standard: 1

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 5^b

Jersey City - Newark Ave. (9)^b
 Bordentown (2)^b
 Fieldsboro (2)^b
 Camden - Riverview Towers (2)^b
 Jersey City - Collocated (2)^b

* No. of sites in compliance with the 24-hour standard: 96

* No. of sites not in compliance with the annual standard: 4

| | |
|---------------------------|----------|
| Jersey City - Newark Ave. | Linden |
| Paterson - Broadway | Carteret |

* No. of sites in compliance with the annual standard: 81

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 1

S57 Pedricktown

* No. of sites in compliance with the quarterly standard: 10

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 10

| | |
|--------------------|-----------------|
| Morristown (40) | Paterson (4) |
| Jersey City (12) | Burlington (2) |
| Atlantic City (10) | Freehold (2) |
| Elizabeth (8) | Perth Amboy (2) |
| Hackensack (4) | Toms River (2) |

* No. of sites in compliance with the 8-hour standard: 12

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 10

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 31

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 27

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) In violation of a New Jersey standard (if different)
 Number in parentheses () indicates number of violations

SUMMARY OF 1981 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 13

| | |
|-------------------|-------------------|
| Nacote Creek (10) | Dumont (4) |
| Cape May (7) | Newark (4) |
| McGuire AFB (7) | Ancora S.H. (3) |
| Trenton (7) | Plainfield (3) |
| Camden Lab (6) | Chester (2) |
| Bayonne (5) | New Brunswick (2) |
| Flemington (5) | |

* No. of sites in compliance with the 1-hour standard: 2

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 4

Morristown (25)
 Jersey City (5)
 Camden Lab (2)
 Freehold (2)

* No. of sites in compliance with the 8-hour standard: 19

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 4^b

Newark - Doremus Ave. (8)^b
 Camden - Riverview Towers (4)^b
 Bayonne - Hudson Co. Park (2)^b
 Sewaren (2)^b

* No. of sites in compliance with the 24-hour standard: 93

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 83

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 11

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 1

Pedricktown (1)

* No. of sites in compliance with the quarterly standard: 10

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 29

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 25

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) In violation of a New Jersey standard (if different)
 Number in parentheses () indicates number of violations

SUMMARY OF 1982 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 13

| | |
|-------------------|------------------|
| Trenton (10) | Plainfield (7) |
| Flemington (9) | Bayonne (5) |
| New Brunswick (9) | Camden Lab (4) |
| Chester (8) | Nacote Creek (4) |
| Clarksboro (8) | Newark (4) |
| Dumont (8) | East Orange (2) |
| McGuire AFB (7) | |

* No. of sites in compliance with the 1-hour standard: 3

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 6

Jersey City (15)
Elizabeth (9)
Morristown (9)
Camden Lab (3)
East Orange (3)
Newark (3)

* No. of sites in compliance with the 8-hour standard: 17

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 3^b

Jersey City - Liberty Park (3)^b
Newark - Boy's Club (3)^b
Newark - Military Park (2)^b

* No. of sites in compliance with the 24-hour standard: 88

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 56

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 10

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 0

* No. of sites in compliance with the quarterly standard: 12

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 29

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 29

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) In violation of a New Jersey standard (if different)
Number in parentheses () indicates number of violations

SUMMARY OF 1983 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 15

McGuire AFB (20) Newark (13)
Camden Lab (19) Chester (11)
Trenton (16) Bayonne (10)
Clarksboro (15) Flemington (9)
Nacote Creek (15) Ancora S.H. (8)
Plainfield (15) East Orange (7)
Cliffside Park (13) Millville (6)
New Brunswick (13)

- * No. of sites in compliance with the 1-hour standard: 0

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 1^b

Jersey City - Duncan Ave. (3)^{bc}

- * No. of sites in compliance with the 24-hour standard: 48

- * No. of sites not in compliance with the annual standard: 1

Jersey City - Duncan Ave.^c

- * No. of sites in compliance with the annual standard: 48

Lead (Pb)

- * No. of sites not in compliance with the quarterly standard: 2

New Brunswick (1)
S57 Pedricktown (1)

- * No. of sites in compliance with the quarterly standard: 9

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 4

Elizabeth (14)
Jersey City (11)
Morristown (10)
Hackensack (3)

- * No. of sites in compliance with the 8-hour standard: 12

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the annual standard: 0

- * No. of sites in compliance with the annual standard: 12

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0

- * No. of sites in compliance with the 3-hour or 24-hour standard: 22

- * No. of sites not in compliance with the annual standard: 0

- * No. of sites in compliance with the annual standard: 22

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) In violation of a New Jersey standard (if different)
Number in parentheses () indicates number of violations

SUMMARY OF 1984 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 13

| | |
|-------------------|--------------------|
| McGuire AFB (11) | Trenton (5) |
| Camden Lab (10) | Ancora S.H. (4) |
| Nacote Creek (9) | Plainfield (4) |
| New Brunswick (8) | Cliffside Park (3) |
| Bayonne (6) | Flemington (2) |
| Clarksboro (6) | Millville (2) |
| Newark (6) | |

- * No. of sites in compliance with the 1-hour standard: 2

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 7

Jersey City (43)
 Elizabeth (16)
 East Orange (6)
 Hackensack (6)
 Morristown (5)
 Elizabeth (3)
 Trenton (2)

- * No. of sites in compliance with the 8-hour standard: 10

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 1^a 5^b

Pennsauken (3)^{ab}
 Linden (4)^{bc}
 015 Jersey City (3)^{bd}
 044 Newark (2)^b
 060 Newark (2)^b

- * No. of sites in compliance with the 24-hour standard: 56^a 52^b

- * No. of sites not in compliance with the annual standard: 1

015 Jersey City^d

- * No. of sites in compliance with the annual standard: 47

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the annual standard: 0

- * No. of sites in compliance with the annual standard: 10

Lead (Pb)

- * No. of sites not in compliance with the quarterly standard: 1

New Brunswick (1)

- * No. of sites in compliance with the quarterly standard: 12

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0

- * No. of sites in compliance with the 3-hour or 24-hour standard: 23

- * No. of sites not in compliance with the annual standard: 0

- * No. of sites in compliance with the annual standard: 21

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Construction activity in vicinity of sampler
 d) Abnormal burning in vicinity of sampler
 Number in parentheses () indicates number of violations

SUMMARY OF 1985 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 13

| | |
|--------------------|--------------------|
| Bayonne (11) | Nacote Creek (6) |
| Camden Lab (11) | Cliffside Park (5) |
| Ancora S.H. (10) | Clarksboro (4) |
| New Brunswick (10) | Newark (4) |
| Colliers Mills (9) | Plainfield (4) |
| McGuire AFB (8) | Flemington (3) |
| Rider College (8) | |

* No. of sites in compliance with the 1-hour standard: 2

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 3

Elizabeth (11)
Jersey City (9)
Morristown (2)

* No. of sites in compliance with the 8-hour standard: 13

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 8^b

| | |
|---------------------------------|-------------------------------|
| Linden (6) ^{bc} | Clifton (2) ^b |
| Newark-Ave.C (4) ^{bd} | Jersey City (2) ^{be} |
| New Brunswick (3) ^{bd} | Pennsauken (2) ^b |
| Sewaren (3) ^b | Perth Amboy (2) ^b |

* No. of sites in compliance with the 24-hour standard: 45^a 37^b

* No. of sites not in compliance with the annual standard: 3

Jersey City (81.0 ug/m³)^e
Linden (81.2 ug/m³)^c
Newark-Ave.C (82.1 ug/m³)^d

* No. of sites in compliance with the annual standard: 37

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 8

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 0

* No. of sites in compliance with the quarterly standard: 15

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 22

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 20

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Construction activity in vicinity of sampler
 d) Lead (Pb) monitoring site
 e) Abnormal burning in vicinity of sampler
 Number in parentheses () indicates number of violations

SUMMARY OF 1986 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 11

| | |
|--------------------|-------------------|
| Ancora S.H. (6) | Flemington (4) |
| Camden Lab (6) | McGuire AFB (4) |
| Chester (6) | Plainfield (4) |
| Rider College (5) | Bayonne (3) |
| Clarksboro (4) | New Brunswick (3) |
| Colliers Mills (4) | |

* No. of sites in compliance with the 1-hour standard: 3

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 5

Morristown (5)
Elizabeth (4)
Jersey City (4)
Fort Lee (2)
Hackensack (2)

* No. of sites in compliance with the 8-hour standard: 12

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 1^a 4^b

| | |
|---------------------------------|-----------------------------|
| Perth Amboy (8) ^{abc} | Newark (4) ^{bc} |
| New Brunswick (4) ^{bc} | Pennsauken (2) ^b |

* No. of sites in compliance with the 24-hour standard: 46^a 43^b

* No. of sites not in compliance with the annual standard: 2

Newark (83.5 ug/m³)^c
Perth Amboy (77.5 ug/m³)^c

* No. of sites in compliance with the annual standard: 39

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 8

Lead (Pb)

* No. of sites not in compliance with the quarterly standard: 1

USMR-Smelter Dock (2)

* No. of sites in compliance with the quarterly standard: 29

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 18

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 18

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1987 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 14

| | |
|--------------------|-------------------|
| Camden Lab (23) | Millville (7) |
| Rider College (16) | New Brunswick (6) |
| Plainfield (14) | McGuire AFB (5) |
| Bayonne (10) | Chester (4) |
| Clarksboro (10) | Flemington (4) |
| Ancora S.H. (9) | Nacote Creek (4) |
| Cliffside Park (9) | Newark (3) |

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 15

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 2^b

Newark (5)^c New Brunswick (2)^c

* No. of sites in compliance with the 24-hour standard: 28^a 26^b

* No. of sites not in compliance with the 12-month standard: 2^a

Newark (92.7 ug/m³)^c
Perth Amboy (77.0 ug/m³)^c

* No. of sites in compliance with the 12-month standard: 26

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the annual standard: 0

* No. of sites in compliance with the annual standard: 8

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 30

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 17

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 17

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1988 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 14

| | |
|---------------------|------------------|
| Ancora S.H. (23) | Plainfield (15) |
| Camden Lab (20) | Bayonne (14) |
| Clarksboro (20) | Flemington (14) |
| Chester (18) | McGuire AFB (13) |
| Rider College (18) | Millville (11) |
| Cliffside Park (16) | Newark (8) |
| New Brunswick (15) | Nacote Creek (6) |

* No. of sites in compliance with the 1-hour standard: 0

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 1

Elizabeth (2)

* No. of sites in compliance with the 8-hour standard: 14

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 7^b

| | |
|---------------------|-----------------------|
| 060 Newark (8) | 061 Atlantic City (2) |
| 063 Perth Amboy (4) | 014 Jersey City (2) |
| 005 Carteret (3) | 052 Union City (2) |
| 044 Newark (3) | |

* No. of sites in compliance with the 24-hour standard: 28^a 21^b

* No. of sites not in compliance with the 12-month standard: 1

060 Newark (96.4 ug/m³)^c

* No. of sites in compliance with the 12-month standard: 27

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 9

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 30

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 17

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 17

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1989 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 9
 - Monmouth College (10)
 - Ancora S.H. (5)
 - McGuire AFB (4)
 - Camden Lab (3)
 - Clarksboro (3)
- Flemington (3)
- Rider College (3)
- Chester (2)
- Millville (2)
- * No. of sites in compliance with the 1-hour standard: 6

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 2
 - Camden Lab (2)
 - East Orange (2)
- * No. of sites in compliance with the 8-hour standard: 13

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 1^b
 - 060 Newark (4)
- * No. of sites in compliance with the 24-hour standard: 15^a 14^b
- * No. of sites not in compliance with the 12-month standard: 1
 - 060 Newark (80.0 ug/m³)^c
- * No. of sites in compliance with the 12-month standard: 14

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the 12-month standard: 0
- * No. of sites in compliance with the 12-month standard: 9

Lead (Pb)

- * No. of sites not in compliance with the 3-month standard: 0
- * No. of sites in compliance with the 3-month standard: 16

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0
- * No. of sites in compliance with the 3-hour or 24-hour standard: 17
- * No. of sites not in compliance with the 12-month standard: 0
- * No. of sites in compliance with the 12-month standard: 17

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1990 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 14

| | |
|--------------------|--------------------|
| New Brunswick (7) | Clarksboro (4) |
| Flemington (6) | McGuire AFB (4) |
| Monmouth Coll. (6) | Chester (3) |
| Ancora S.H. (5) | Camden Lab (2) |
| Bayonne (5) | Cliffside Park (2) |
| Nacote Creek (5) | Millville (2) |
| Rider College (5) | Newark (2) |

* No. of sites in compliance with the 1-hour standard: 1

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 1^b

060 Newark (2)

* No. of sites in compliance with the 24-hour standard: 15^a 14^b

* No. of sites not in compliance with the 12-month standard: 1^a 5^b

060 Newark (80.2 ug/m³)^c

* No. of sites in compliance with the 12-month standard: 13^a 9^b

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 9

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 15

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 17

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 17

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1991 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 11

Rider College (16) Bayonne (5)
 Clarksboro (12) Chester (5)
 McGuire AFB (10) New Brunswick (3)
 Camden Lab (6) Cliffside Park (2)
 Monmouth Coll. (6) Nacote Creek (2)
 Ancora S.H. (5)

* No. of sites in compliance with the 1-hour standard: 4

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 1

Elizabeth (2)

* No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 2^b

057 New Brunswick (3)
 068 New Brunswick (7)

* No. of sites in compliance with the 24-hour standard: 14^a 12^b

* No. of sites not in compliance with the 12-month standard: 0^a 3^b

060 Newark (73.5 ug/m³)^c
 069 Newark (72.0 ug/m³)^c
 068 New Brunswick (67.3 ug/m³)^c

* No. of sites in compliance with the 12-month standard: 14^a 11^b

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 8

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 19

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 17

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 17

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1992 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 6

Rider College (4)
Clarksboro (2)
Colliers Mills (2)
Monmouth College (2)
New Brunswick (2)
Plainfield (2)

- * No. of sites in compliance with the 1-hour standard: 9

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 1

North Bergen (2)

- * No. of sites in compliance with the 8-hour standard: 15

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 1^b

- * No. of sites in compliance with the 24-hour standard: 12^a 11^b

- * No. of sites not in compliance with the 12-month standard: 0^a 3^b

060 Newark (73.5 ug/m³)^c
069 Newark (72.0 ug/m³)^c
068 New Brunswick (66.0 ug/m³)^c

- * No. of sites in compliance with the 12-month standard: 11^a 8^b

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 8

Lead (Pb)

- * No. of sites not in compliance with the 3-month standard: 3

057 New Brunswick
068 New Brunswick
1DR New Brunswick

- * No. of sites in compliance with the 3-month standard: 8

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0

- * No. of sites in compliance with the 3-hour or 24-hour standard: 16

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 16

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)

b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)

c) Lead (Pb) monitoring site

Number in parentheses () indicates number of violations

SUMMARY OF 1993 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 5

Ancora S.H. (9)
Monmouth College (5)
Bayonne (3)
Clarksboro (3)
Rider University (3)

- * No. of sites in compliance with the 1-hour standard: 10

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 0

- * No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 0^b

- * No. of sites in compliance with the 24-hour standard: 13^a 13^b

- * No. of sites not in compliance with the 12-month standard: 0^a 2^b

060 Newark (61.1 ug/m³)^c
069 Newark (60.5 ug/m³)^c

- * No. of sites in compliance with the 12-month standard: 13^a 11^b

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 8

Lead (Pb)

- * No. of sites not in compliance with the 3-month standard: 0

- * No. of sites in compliance with the 3-month standard: 12

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0

- * No. of sites in compliance with the 3-hour or 24-hour standard: 16

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 16

- a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) Lead (Pb) monitoring site
Number in parentheses () indicates number of violations

SUMMARY OF 1994 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 3

New Brunswick (4)
Rider University (4)
Plainfield (2)

- * No. of sites in compliance with the 1-hour standard: 12

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 3

North Bergen (4)
East Orange (3)
Elizabeth (2)

- * No. of sites in compliance with the 8-hour standard: 13

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 2^b

057 New Brunswick (3)
068 New Brunswick (3)

- * No. of sites in compliance with the 24-hour standard: 13^a 11^b

- * No. of sites not in compliance with the 12-month standard: 0^a 2^b

060 Newark (71.0 ug/m³)^c
069 Newark (69.1 ug/m³)^c

- * No. of sites in compliance with the 12-month standard: 13^a 11^b

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 9

Lead (Pb)

- * No. of sites not in compliance with the 3-month standard: 0

- * No. of sites in compliance with the 3-month standard: 12

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0

- * No. of sites in compliance with the 3-hour or 24-hour standard: 16

- * No. of sites not in compliance with the 12-month standard: 0

- * No. of sites in compliance with the 12-month standard: 16

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
c) Lead (Pb) monitoring site
Number in parentheses () indicates number of violations

SUMMARY OF 1995 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 11

Colliers Mills (6) Camden (3)
 Monmouth Univ. (5) Ancora S.H. (2)
 New Brunswick (5) Bayonne (2)
 Rider Univ. (5) Chester (2)
 Rutgers Univ. (5) Millville (2)
 Clarksboro (4)

* No. of sites in compliance with the 1-hour standard: 5

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 2^a 2^b

057 New Brunswick^c (2)^a (8)^b
 068 New Brunswick^c (5)^a (12)^b

* No. of sites in compliance with the 24-hour standard: 11^a 11^b

* No. of sites not in compliance with the 12-month standard: 0^a 2^b

060 Newark (69.1 ug/m³)^c
 069 Newark (68.9 ug/m³)^c

* No. of sites in compliance with the 12-month standard: 13^a 11^b

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 10

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 12

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 16

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 16

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1996 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

- * No. of sites not in compliance with the 1-hour standard: 1

Camden (2)
- * No. of sites in compliance with the 1-hour standard: 14

Carbon Monoxide (CO)

- * No. of sites not in compliance with the 8-hour standard: 0
- * No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

- * No. of sites not in compliance with the 24-hour standard: 0^a 2^b

057 New Brunswick (2)^c
068 New Brunswick^c (2)^c
- * No. of sites in compliance with the 24-hour standard: 14^a 12^b
- * No. of sites not in compliance with the 12-month standard: 0^a 2^b

060 Newark (67.8 ug/m³)^c
069 Newark (68.1 ug/m³)^c
- * No. of sites in compliance with the 12-month standard: 13^a 11^b

Nitrogen Dioxide (NO₂)

- * No. of sites not in compliance with the 12-month standard: 0
- * No. of sites in compliance with the 12-month standard: 11

Lead (Pb)

- * No. of sites not in compliance with the 3-month standard: 0
- * No. of sites in compliance with the 3-month standard: 13

Sulfur Dioxide (SO₂)

- * No. of sites not in compliance with the 3-hour or 24-hour standard: 0
- * No. of sites in compliance with the 3-hour or 24-hour standard: 16
- * No. of sites not in compliance with the 12-month standard: 0
- * No. of sites in compliance with the 12-month standard: 16

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)
 b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
 c) Lead (Pb) monitoring site
 Number in parentheses () indicates number of violations

SUMMARY OF 1997 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 7

Ancora S.H. (4) Nacote Creek (3)
Colliers Mills (4) Monmouth Univ. (2)
Rutgers Univ. (4) Rider Univ. (2)
Clarksboro (3)

* No. of sites in compliance with the 1-hour standard: 8

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 17

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 2^b

057 New Brunswick (2)^c
068 New Brunswick (5)^c

* No. of sites in compliance with the 24-hour standard: 5^a 3^b

* No. of sites not in compliance with the annual TSP standard: 0^a 0^b

* No. of sites in compliance with the 12-month standard: 5^a 5^b

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 11

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 6

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 16

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 16

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)

b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)

c) Lead (Pb) monitoring site

Number in parentheses () indicates number of violations

SUMMARY OF 1998 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 2

Colliers Mills (3) Monmouth Univ. (2)

* No. of sites in compliance with the 1-hour standard: 12

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 16

Total Suspended Particulates (TSP)

* No. of sites not in compliance with the 24-hour standard: 0^a 0^b

* No. of sites in compliance with the 24-hour standard: 3^a 3^b

* No. of sites not in compliance with the annual TSP standard: 0^a 0^b

* No. of sites in compliance with the 12-month standard: 3^a 3^b

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 11

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 3

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 15

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 15

a) In violation of a primary National Ambient Air Quality Standard (Health Standard)

b) In violation of a secondary National Ambient Air Quality Standard (Welfare Standard)
Number in parentheses () indicates number of violations

SUMMARY OF 1999 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 9

Ancora S.H. (2) Flemington (2)
Bayonne (5) Ramapo (2)
Camden (2) Rider Univ. (6)
Clarksboro (2) Rutgers Univ. (4)
Colliers Mills (3)

* No. of sites in compliance with the 1-hour standard: 5

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 15

Inhalable Particulates (IP)

* No. of sites not in compliance with the 24-hour standard: 0

* No. of sites in compliance with the 24-hour standard: 11

* No. of sites not in compliance with the annual IP standard: 0

* No. of sites in compliance with the 12-month standard: 10

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 10

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 3

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 15

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 15

Number in parentheses () indicates number of violations

SUMMARY OF 2000 AIR QUALITY IN NEW JERSEY

Criteria Pollutants

Ozone (O₃)

* No. of sites not in compliance with the 1-hour standard: 3

Ancora S.H. (2)
Colliers Mills (4)
Monmouth University (2)

* No. of sites in compliance with the 1-hour standard: 11

Carbon Monoxide (CO)

* No. of sites not in compliance with the 8-hour standard: 0

* No. of sites in compliance with the 8-hour standard: 14

Inhalable Particulates (IP)

* No. of sites not in compliance with the 24-hour standard: 0

* No. of sites in compliance with the 24-hour standard: 10

* No. of sites not in compliance with the annual IP standard: 0

* No. of sites in compliance with the 12-month standard: 9

Nitrogen Dioxide (NO₂)

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 9

Lead (Pb)

* No. of sites not in compliance with the 3-month standard: 0

* No. of sites in compliance with the 3-month standard: 3

Sulfur Dioxide (SO₂)

* No. of sites not in compliance with the 3-hour or 24-hour standard: 0

* No. of sites in compliance with the 3-hour or 24-hour standard: 14

* No. of sites not in compliance with the 12-month standard: 0

* No. of sites in compliance with the 12-month standard: 14

Number in parentheses () indicates number of violations

APPENDIX B
NEW JERSEY AIR QUALITY
NON-ATTAINMENT AREAS

NEW JERSEY AIR QUALITY NON-ATTAINMENT AREAS

Sulfur Dioxide^a

Warren County:

The Town of Belvidere
The Township of Harmony
Portion of Liberty Township (South of UTM coordinates N4522
and West of coordinate E505)
Portion of Mansfield Township (West of coordinate E505)
The Township of Oxford
The Township of White

Carbon Monoxide^b

Bergen County
Essex County
Hudson County
Union County

Passaic County:

The City of Clifton
The City of Paterson
The City of Passaic

Nitrogen Dioxide

No areas in the State are designated as non-attainment

Lead

No areas in the State are designated as non-attainment

PM-10

No areas in the State are designated as non-attainment

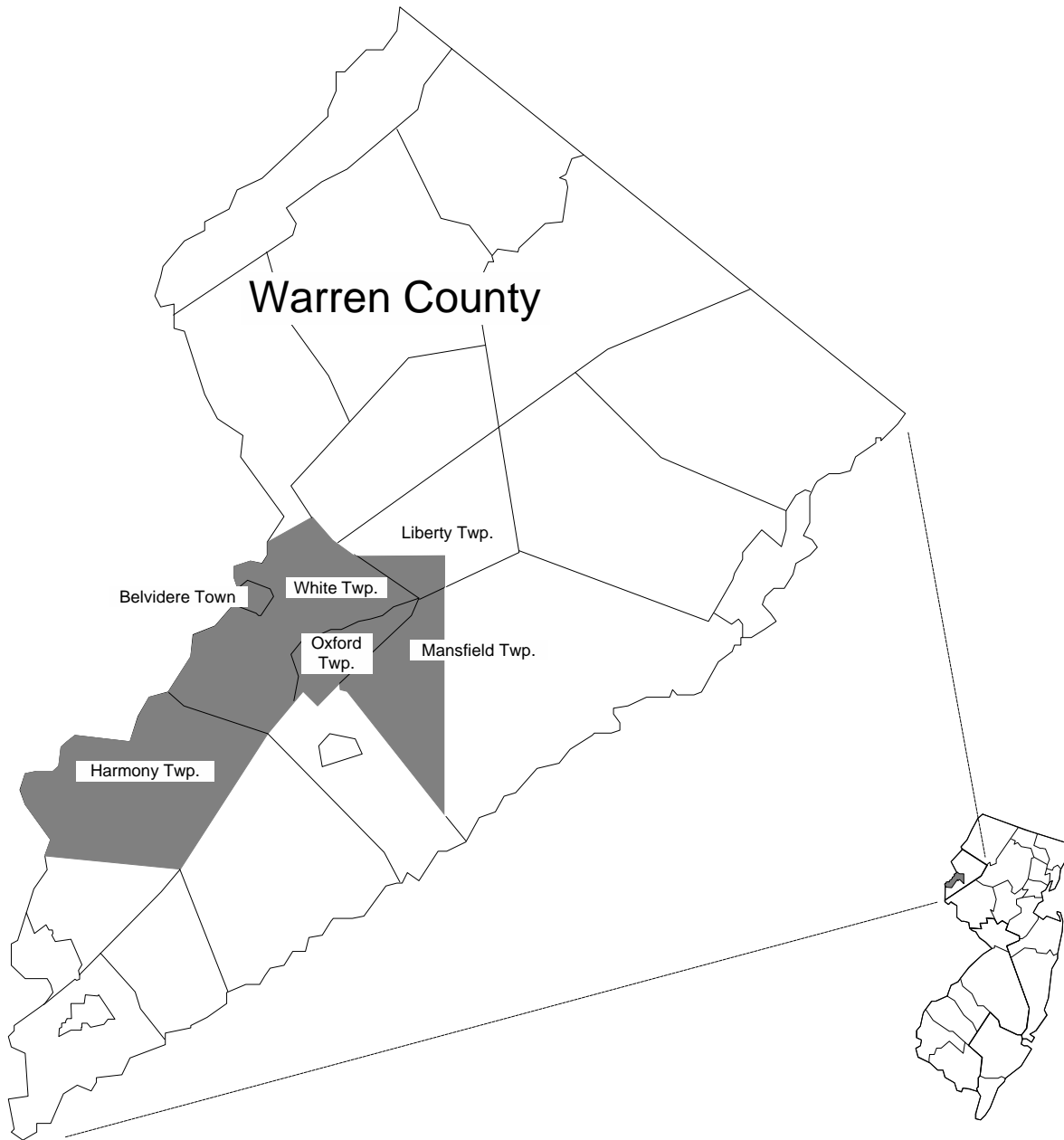
Ozone^b

The entire State of New Jersey

a) Non-attainment of National Primary (Health) and Secondary (Welfare) Standards

b) Non-attainment of National Primary (Health) Standard

Sulfur Dioxide Non-Attainment Areas* in New Jersey

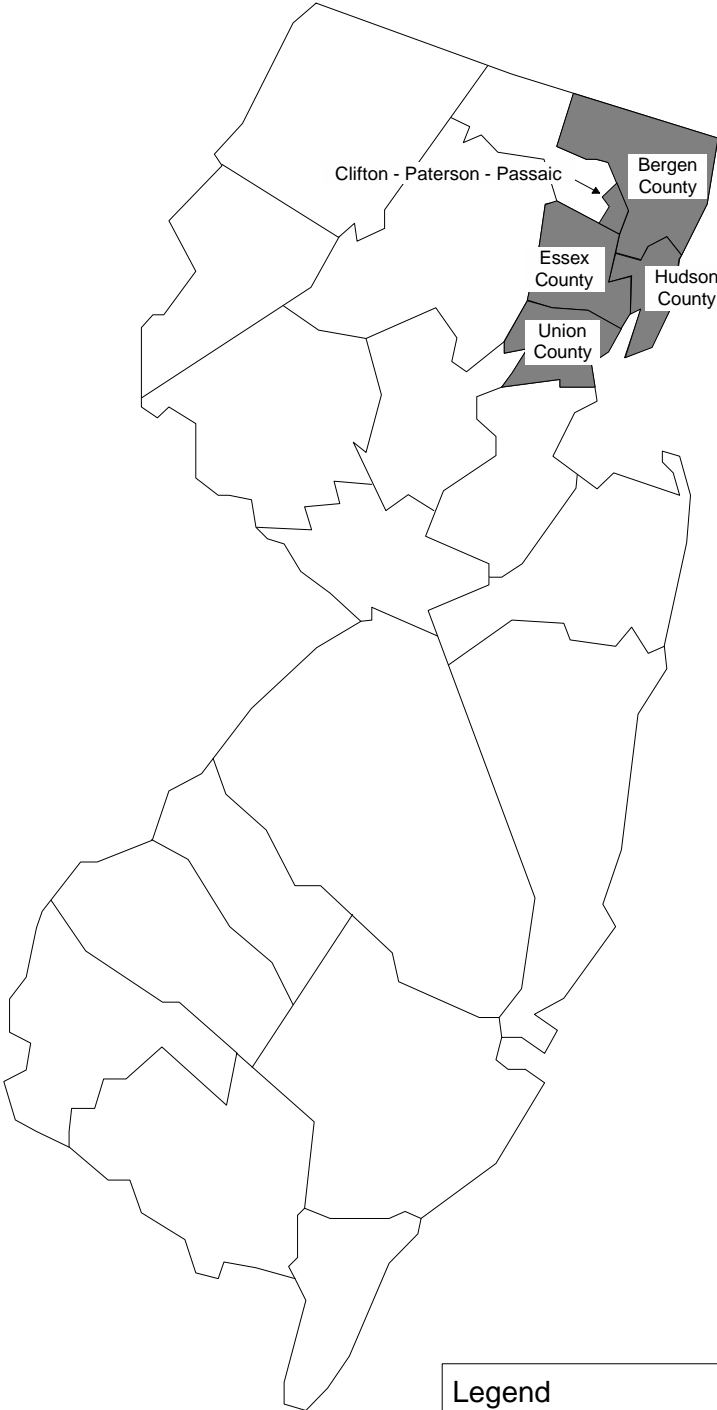


Legend

- Sulfur Dioxide Nonattainment Area
(includes Belvidere Town; Harmony Township; Oxford Township; White Township; the portion of Liberty Township south of UTM northing 4,255,000 and west of UTM easting 505,000; and the portion of Mansfield Township west of UTM easting 505,000).

*Nonattainment of the National Primary (Health) and Secondary (Welfare) Standards

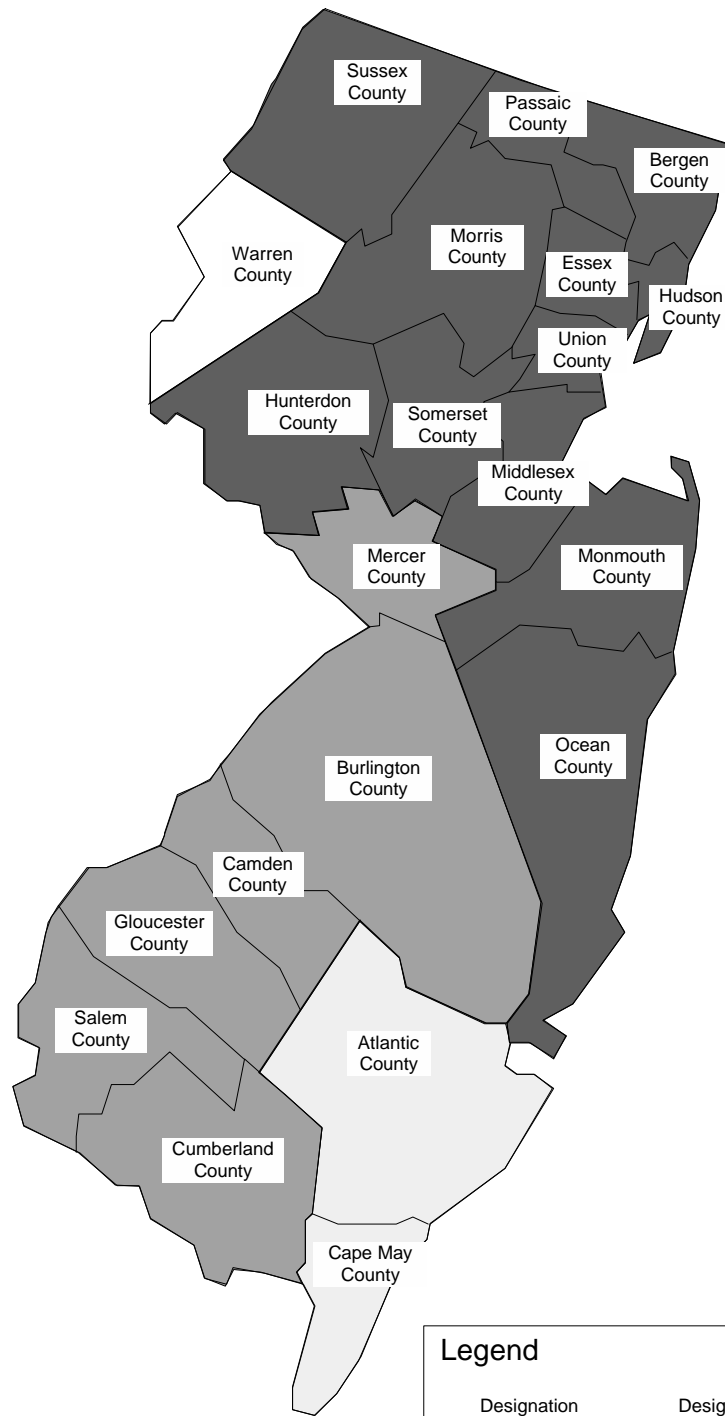
Carbon Monoxide Non-Attainment Areas* in New Jersey







| Designation | Design Value | Attainment Date |
|-------------|-----------------|-----------------|
| Moderate 2 | 12.8 - 16.4 ppm | Dec. 31, 1995 |

*Nonattainment of the National Primary (Health) Standard

Ozone Non-Attainment Areas* in New Jersey



| Legend | | |
|---|-----------------------------|-----------------|
| Designation | Design Value | Attainment Date |
|  | Marginal .121 - .137 ppm | Nov. 15, 1993 |
|  | Moderate .138 - .159 ppm | Nov. 15, 1996 |
|  | Severe 1 .180 - .190 ppm | Nov. 15, 2005 |
|  | Severe 2 .191 - .279 ppm | Nov. 15, 2007 |

*Nonattainment of the National Primary (Health) Standard

