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In Pursuit of Clean Air: A Data Book of Problems and Strategies at the State Level

Volume 3 Federal Regions IV and VI

D. B. Garvey and D. G. Streets

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IN PURSUIT OF CLEAN AIR: A DATA BOOK OF PROBLEMS AND STRATEGIES AT THE STATE LEVEL

Volume 3: Federal Regions IV and VI

by

D.B. Garvey and D.G. Streets

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Energy and Environmental Systems Division

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Assistant Secretary for Environment
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Volume 3

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PREFACE

The Clean Air Act Amendments of 1977 reaffirmed a national commitment to clean air, setting up rigorous requirements intended to achieve and maintain the National Ambient Air Quality Standards in all areas of the country. The solutions to air quality problems, however, must take place at the state and local levels. This five-volume report provides a state-by-state summary of air quality, nonattainment areas, and attainment strategies, based, in part, on the revised State Implementation Plans submitted in response to the 1977 Amendments. The report is designed to provide useful information for policy analysis in the Department of Energy, especially for the examination of possible areas of conflict between the implementation of a national energy policy calling for the increased use of coal and the pursuit of clean air. The report provides an initial basis of information and will be updated as SIPs for nonattainment areas are altered and as the designations of areas are changed.

Major funding for this project was provided by the Policy Analysis Division of the Office of Technology Impacts, DOE/EV, with additional support from the Environmental Impacts Division of OTI. Project direction was provided by Doug Carter of PAD/OTI and John Wilson of EID/OTI.

The report was prepared by the Energy and Environmental Systems Division (EES) of Argonne National Laboratory (ANL), with the assistance of the ANL Applied Mathematics Division in digitizing the maps of designated nonattainment areas by use of the ALICE system. Mary Snider (ANL/EES) prepared the computer maps and D. Seymour (ANL/EES) provided the computer data. Additional contributions to the report were provided by R. Kotecki, former staff member of EES.

LIST OF ABBREVIATIONS

APCD	- Air Pollution Control District
AQCR	- Air Quality Control Region
Btu	- British thermal unit
CAAA	- Clear Air Act Amendments
EPA	- Environmental Protection Agency
FGD	- flue gas desulfurization
FMVECP	- Federal Motor Vehicle Emissions Control Program
FPC	- Federal Power Commission
LAER	- lowest achievable emission rate
m^3	- cubic meter
MSER	- most stringent emission rate
MM	- million (10^6)
MW	- megawatt (10^6 watts)
g	- microgram (10^{-6} gram)
NAAQS	- National Ambient Air Quality Standards
Pollutants	- CO = carbon monoxide
	HC = hydrocarbons
	NO_x = nitrogen
	O_x = photochemical oxidants (including ozone)
	PM = particulate matter
	SO_2 = sulfur dioxide
	TSP = total suspended particulates
	VOC = volatile organic compounds
ppm	- parts per million
PSD	- prevention of significant deterioration
RACM	- reasonably available control measures
RACT	- reasonably available control technology
SAROAD	- Storage and Retrieval of Aerometric Data
SIP	- state implementation plan

INTRODUCTION

The actions that must be taken to achieve national air quality goals, as prescribed by federal clean air legislation and subsequent regulations promulgated by the Environmental Protection Agency (EPA) may have significant impacts on the future siting and emission control requirements for new major sources of emissions, on future patterns of fuel use, and on the success of a national energy policy designed to increase the use of coal in both the utility and industrial sectors of the economy. Since the most recent amendments to the Clean Air Act were passed by Congress in August 1977, attention has focused on the implications of various portions of the legislation for economic growth and development in general, and on the possible conflicts that might arise between energy policy goals and environmental policies for the maintenance and improvement of national air quality.

The 1977 Clean Air Act Amendments (CAAA) provided a comprehensive scheme for air quality management across the nation, covering areas where the air is currently cleaner than the levels set by the National Ambient Air Quality Standards (NAAQS) under the requirements for the Prevention of Significant Deterioration (PSD), and areas where the air is dirtier than the standards (nonattainment areas). Those sections of the Amendments, and subsequent EPA regulations, governing nonattainment areas have been a focus of particular interest to energy policy makers. The legislation required states to submit revised cleanup plans (State Implementation Plans or SIPs) outlining procedures for achieving the standards by December 31, 1982, with possible extensions to December 31, 1987, for carbon monoxide and oxidants. The deadline for submittal of the plans to EPA was set at January 1, 1979, with July 1, 1979, set as the deadline for an EPA-approved plan to be in effect. Severe sanctions -- a ban on the construction of new sources of emissions and a limit on federal funds for highway construction and sewage treatment plants -- were to be placed on any state failing to have a revised plan approved by the July 1 deadline.

Information on nonattainment areas -- for example, their location, the requirements for new sources being sited in or near such areas, the controls to be applied, and the degree of cleanup to be achieved by existing sources -- is important for an analysis of the interactions between energy

policy and air quality goals. Consequently, a project was begun in January 1979 to review all revised SIPs for nonattainment areas, to outline the causes and proposed cures, and to provide digitized maps of the subcounty areas designated as nonattainment by the states. The new source review procedures and the emission limitations for particulate matter (PM) and sulfur dioxide (SO_2) that apply to fuel combustion were summarized for each state. In order to provide additional background material for evaluating the extent of nonattainment and the possible constraints on energy development, maps have been prepared of the locations of monitors and of power plants. The maps are accompanied by information drawn from EPA and Federal Power Commission (FPC) data bases, such as the ambient concentrations recorded at specific monitors and the generating capacity of and fuel used by the utility plants.

This information was gathered for all 48 contiguous states, and is presented in Volumes 2 to 5 of this report, which are organized by Federal Region. For each state (placed in alphabetical order within the Federal Region) the following material is provided:

1 STATE TITLE PAGE

A summary of air quality data is presented to enable the reader to judge the general condition of a state at a glance. The summary lists the number of discrete (i.e., noncontiguous) nonattainment areas for each pollutant, the number of monitors with valid readings for a particular averaging time for a pollutant, and the number of monitors that recorded a violation of the standard. (Note that the monitors that have adequate data to be used for determining an annual average are a subset of the monitors that are valid for the 24-hour averages.) To complete the quick survey of a state, the numbers of fossil-fueled and nuclear power plants are included on the title page.

2 REVISED SIP OUTLINE

This brief examination of the contents of the revised SIP covers the sources of the problems, the proposed strategies for achieving attainment, and the new source review procedure the state intended to follow in the nonattainment areas. The version of the SIP used (e.g., draft or final and date) is indicated. The comprehensiveness of the coverage of these outlines varies, reflecting the version available when the report was prepared and the com-

pleteness of the documentation by the state. (In general, the states submitted revised plans in a piecemeal fashion, area-by-area and pollutant-by-pollutant.) The outlines attempt to draw the separate submissions into a comprehensible picture for the state as a whole.

Section I of the outline describes the sources of nonattainment in the state. Section II outlines the strategies the state proposed for attaining the standards. Since the report concentrates on those pollutants most likely to affect an energy policy directed at increased coal use, the strategies for attaining the SO_2, total suspended particulates (TSP), and nitrogen oxides (NO_x) standards are examined more closely than those for carbon monoxide (CO) and oxidant (O_x) standards.

SO_2 problems are usually the result of emissions from individual major point sources (frequently out of compliance with existing SIP requirements) and attainment strategies address cleaning up those particular sources. TSP problems are more frequently blamed on fugitive dust. The attainment strategies are often somewhat vague indications that possible controls will be examined and required, as appropriate. Most states requested the 18-month extension that was available for the submittal of a plan to attain the secondary TSP standard. EPA granted the extension, if the state had demonstrated that reasonably available control technology (RACT) was already required for all stationary point sources and that controls on fugitive process emissions and on nontraditional sources (such as road dust) would be necessary for attainment.

The attainment strategies for CO and O_x depend on the reduction of emissions from motor vehicles, through the projected effects of the Federal Motor Vehicle Emissions Control Program (FMVECP) combined with general estimates of vehicle turnover, i.e., rates of replacement of older vehicles. States requesting the statutory extension of the deadline for attainment to December 31, 1987, were required to include RACT on point sources (as specified in EPA's control techniques guidances for 11 stationary sources of volatile organic compounds or VOC), traffic control measures (as outlined in EPA's guidelines), and an inspection and maintenance program for motor vehicles.

Section III of the outline briefly describes the new source review a state planned to follow in nonattainment areas, noting in each case whether an emission offset rule or a growth allowance would be used. Section IV lists

the PM and SO_2 emission limitations required by the SIP for fuel combustion in existing sources. (Note that standards for ambient air quality are expressed in terms of TSP, whereas emissions limits on sources are expressed in terms of PM.)

3 MAPS OF NONATTAINMENT AREAS, AS DESIGNATED

In order to determine the areas for which revised SIPs would be needed, the 1977 Amendments to the Clean Air Act required a formal list of areas where the standards were being violated. The original designations were made in March 1978. A number of changes in the designations were made as additional air quality data became available. The maps in this report are based on designations as of May 1979.

Additional changes in the attainment status of a number of areas have been made since May 1979. The majority of the changes have occurred in the designations for the oxidant standard. As a result of EPA's revision of the standard, many areas could be redesignated as in attainment of the less stringent level. Few changes have been made in the CO nonattainment areas. The areas were already drawn to be quite small, often around a central business district. Minimal changes have been made since May 1979 in SO_2 nonattainment areas. Two areas in Ohio have become attainment (as noted in the outline) and New Mexico has drawn even smaller nonattainment areas around sources (in one case, a circle of one-mile radius). TSP areas have been subject to considerably more redesignation activity -- areas are drawn smaller; areas formerly exceeding the primary standard are proposed as exceeding only the secondary standards; areas that were violating the secondary standard are redesignated as attainment.

It is expected that this project will update the maps of nonattainment areas to reflect these changes. The areas currently shaded on the maps must still be viewed as potential problem areas. An area that has just become attainment or that is just outside the boundaries of a designated nonattainment area may still not be able to support new sources of emissions.

The absence of a map for a pollutant indicates either that the state was in attainment, or (in the case of oxidants only) that the entire state was designated as nonattainment. The title page for each state indicates pollutant data that were not mapped. The nonattainment maps and other maps that

follow them are numbered sequentially through this volume; these sequential numbers are preceded by a roman numeral identifying the Federal Region a given state is in.

4 SAROAD DATA

A computer print-out provides a listing of all the monitors within a state, with a number for each monitor, its latitude and longitude, and its recorded pollutant concentrations (in g/m^3, or mg/m^3 for CO) based on 1975 data from EPA's Storage and Retrieval of Aerometric Data (SAROAD) system. The monitor readings were coded as follows:

Code	Reading (% of standard limit)
1	0-75
2	76-100
3	101-125
4	>125

Monitors that clearly had incorrect latitudes and longitudes (i.e., falling outside the state boundaries when mapped) were not plotted; they are indicated by an asterisk. The monitors were numbered sequentially in their order in the data base, and only monitors for the criteria pollutants were printed. Missing numbers in the sequence represent monitors for noncriteria pollutants.

5 SAROAD DATA MAPS

Monitors that were shown in the data base as having adequate data on a particular pollutant were mapped, with a shaded circle to indicate a monitor that recorded a violation of a particular standard (reading codes 3 and 4) and an unshaded circle to indicate a monitor that did not record a violation in 1975 (reading codes 1 and 2). Maps were provided for each pollutant and each averaging period of the NAAQS, and appear in the following order: 24-hour SO_2, annual average SO_2, 24-hour average TSP, annual average TSP, 8-hour average CO, 1-hour average O_x, and annual average NO_x. Pollutants or standard averaging periods for which a state had no valid monitor reading are not represented by monitor maps, and the absence of a map is noted on the title page for the state. A key map identifies each monitor by its unique number. Where monitors are clustered and their numbers cannot be read, the range of monitor numbers is indicated for reference to the monitor listing.

6 POWER PLANT DATA

On the basis of 1975 FPC data (as contained in EPA's Energy Data System), power plants within each state are listed and assigned a number. The printout contains the plant name, latitude and longitude, operating capacity, and convertible capacity as estimated by EPA's Strategies and Air Standards Division. Plants for which specific locations are not given in the data base or which have clearly incorrect latitude and longitude are noted as "not plotted." Information on fuel use for each plant is also provided, listing the amount of coal (1000 tons per year), oil (1000 barrels per year), and gas (1000 x 10^6 cubic feet per year) burned in 1975, and the average percentage of sulfur in the coal and oil. The absence of fuel use data indicates that the information for the particular installation was not available in the data base. In many cases, such a plant is a proposed or new facility which was not operating in 1975.

7 POWER PLANT MAPS

The power plants in each state are mapped according to the following scheme: a shaded square represents a fossil fuel-fired facility of 1000 MW capacity or more; an unshaded square, a fossil fuel-fired facility smaller than 1000 MW; and a triangle represents a nuclear facility. In addition, a key map identifies the power plants by location and number.

8 COUNTY MAPS

Finally, for general information, a map of each state showing county boundaries and county names is provided.

Federal Region IV
Covering the States of:

Alabama

Florida

Georgia

Kentucky

Mississippi

North Carolina

South Carolina

Tennessee

REGION IV: ALABAMA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	1	1	44	1
	1 yr			7	0
TSP	24 hr	5	2	109	14
	1 yr			23	8
NO_x	1 yr	0[b]	-	9	0
CO	8 hr	0[b]	-	7	2
O_x	1 hr	4	-	7	7

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	13
Nuclear	1
Total	14

ALABAMA: Official SIP, 4/79

I. SOURCES OF THE PROBLEMS

On the basis of 1976-77 air quality data, the Alabama Air Pollution Control Commission designated areas of the state as nonattainment for SO_2, TSP, and O_x, but not for CO or NO_x. There are five counties with violations of the particulate standard. Etowah County's primary nonattainment area is small and is in the vicinity of the Republic Steel Corporation plant in Gadsden. In Jefferson County, primary standard violations have been recorded in the metropolitan Birmingham area and the city of Leeds. Industrial particulate emissions in Jefferson County are primarily from steel mills, coke ovens, associated foundries, quarrying operations, and Portland Cement plants. The SIP suggests that malfunctions of existing control equipment on these stationary sources could result in emissions in excess of the existing allowable rates and thus could directly affect the attainment status of the area. The testing of this hypothesis (and subsequent corrective action) is part of the attainment strategy. In Mobile County, there are two TSP nonattainment areas. The area surrounding the Alabama Power Company's Barry Steam Plant was designated as a secondary nonattainment area. The industrial area in the vicinity of State Docks in Mobile is in violation of the primary standards, as a result of emissions from cement plants and grain elevators and of fugitive process emissions. The secondary nonattainment designation in Morgan County is largely due to emissions from a grain handling and milling facility and a soybean handling facility. The major sources in the Jackson County primary nonattainment area are the Widows Creek Steam Plant, Tennessee Alloy Corporation, the Mead Corporation, and Sequatchie Concrete Service.

Five Alabama counties were designated as in nonattainment for ozone because of a lack of data showing attainment. Madison and Morgan Counties are nonurban areas (less than 200,000 population). Jefferson, Mobile, and Russell Counties are urban counties. In Jefferson County, 44% of the VOC precursors to ozone are emitted by motor vehicles and 56% by stationary sources. In Mobile County, motor vehicles produce 52% of the ozone precursors. In Russell County, 60% of VOC comes from vehicles; in Madison County, 27%; and in Morgan County, 92%.

There are two SO_2 nonattainment areas. A primary area in Jackson County surrounds a TVA power plant. Violations of the secondary standard caused by a TVA power plant have been recorded in an area of adjoining sections of Colbert and Lauderdale Counties.

II. ATTAINMENT STRATEGIES

A. SO_2

1. Jackson County -- the TVA plant is under court order to comply with existing SIP emissions limitations. The stack height required, consistent with good engineering practice, has not been determined because of an inadequate model
2. Colbert and Lauderdale County -- the TVA plant is now in compliance through the use of lower-sulfur coal, and the area is predicted to be in attainment

B. TSP

1. Etowah County -- attainment by 1982 for both primary and secondary NAAQS as a result of:

   a. Additional controls on Republic Steel Plant coke ovens

      - RACT on fugitive emissions from major industrial sources
      - compliance with existing SIP emission limitations

2. Jefferson County

   a. Attainment of the primary NAAQS by 1982 as a result of:

      - compliance with existing SIP
      - controls on coke ovens
      - RACT on industrial process fugitive sources
      - controls on nontraditional sources (carry-out of dust and mud from industry, paving unpaved parking lots, controls of truck spills on paved roads, etc.)

   b. Attainment of the secondary NAAQS will not occur by 1982, and the following will be investigated for imposition by 1990:

- further regulation of pollution control malfunctions (it is thought that control malfunctions are significant contributors to ambient TSP levels)
- reductions in emissions from unpaved and exposed areas
- regulation of construction/demolition
- additional federal control on coke ovens, required for hazardous pollutants

3. Mobile County

   a. Attainment of primary standard in downtown Mobile and in the State Docks area from:

      - NSPS on cement plants and grain elevators
      - RACT on fugitive sources

   b. Attainment of secondary standard in downtown Mobile through:

      - proposed closure of Ideal Basic Industries cement plant in 1980
      - selective controls on nontraditional sources to reduce re-entrained dust

   c. Attainment of the secondary standard around the Barry Steam Plant has already been achieved through additional controls (no violation in 1978)

4. Morgan County -- attainment of secondary standards will result from proposed new controls at a grain milling site and a soybean handling site

5. Jackson County -- attainment of primary standard is predicted if the TVA plant complies with existing regulations. The plant is currently under order to comply

C. O_x

1. Madison and Morgan Counties

   a. Nonurban areas (<200,000 population)

   b. Demonstrate attainment through requiring RACT on major VOC sources, in accordance with EPA guidances

2. Jefferson and Mobile Counties

   a. Urban areas

   b. Demonstrate attainment (of the revised 0.12 ppm standard) by 1982 through:

      - adoption of FMVECP
      - RACT consistent with the 11 control technique guidances for all VOC sources >100 tons per year

3. Russell County

   a. Attainment by 1982 is projected, using a roll-back model, without further control

   b. In accordance with EPA regulations, RACT is still to be required on all major stationary sources

III. NEW SOURCE REVIEW

The EPA's emission offset policy will be followed for all new major sources in nonattainment areas except for nonurban nonattainment areas (<200,000 population) where LAER will be required but no offsets will be necessary. Offsets may be banked after an application to the state agency is approved. Banked offsets can be sold, transferred, or assigned after 30 days notice, with no time limit set on the banking. Sources modified within existing facilities can use a bubble concept. Offsets can be achieved by reducing emissions from an existing source through a change to a cleaner fuel. A demonstration must be made, however, that an adequate supply of the cleaner fuel is available.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2 -- THE EXISTING SIP EMISSION LIIMITATIONS ARE NOT CHANGED:

   1. Category I Counties: 1.8 lb SO_2 per MM Btu of fuel input

   2. Category II Counties: 4.0 lb SO_2 per MM Btu

   3. Widows Creek Power Plant (Jackson Co.): 1.2 lb SO_2 per MM Btu

B. TSP -- THE EXISTING SIP EMISSION LIMITATIONS ARE NOT CHANGED:

1. Category I Counties (Jefferson, Jackson and Mobile)

   a. For sources with fuel input of 10 MM Btu or less per hour: 0.50 lb particulate matter (PM) per MM Btu

   b. For sources with fuel input of 250 MM Btu or more per hour: 0.12 lb PM per MM Btu

   c. Interpolate in this range for sources of intermediate size

2. Category II Counties (all other)

   a. For sources with fuel input of 10 MM Btu or less per hour: 0.80 lb PM per MM Btu

   b. For sources with fuel input of 250 MM Btu or more per hour: 0.12 lb PM per MM Btu

   c. Interpolate in this range for sources of intermediate size

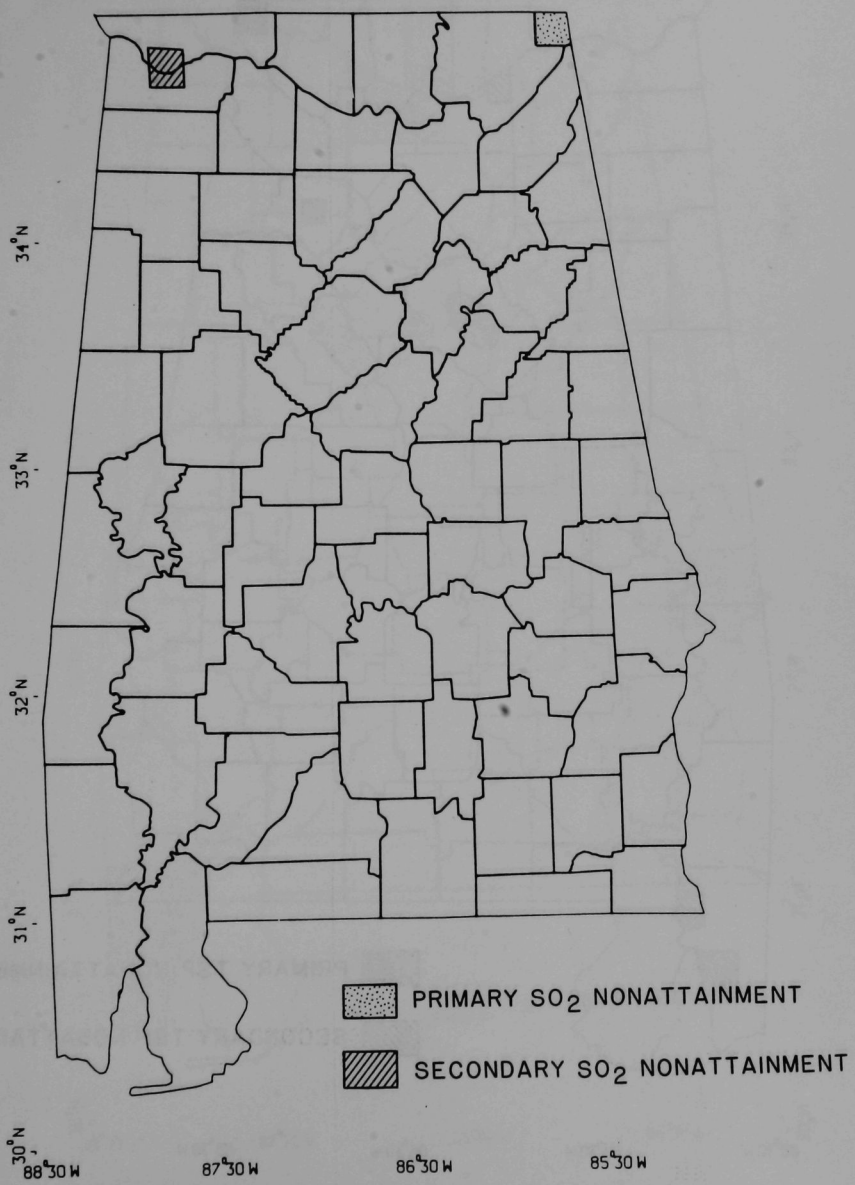


Fig. IV.1. Alabama: SO_2 Nonattainment Areas as Designated May 1979

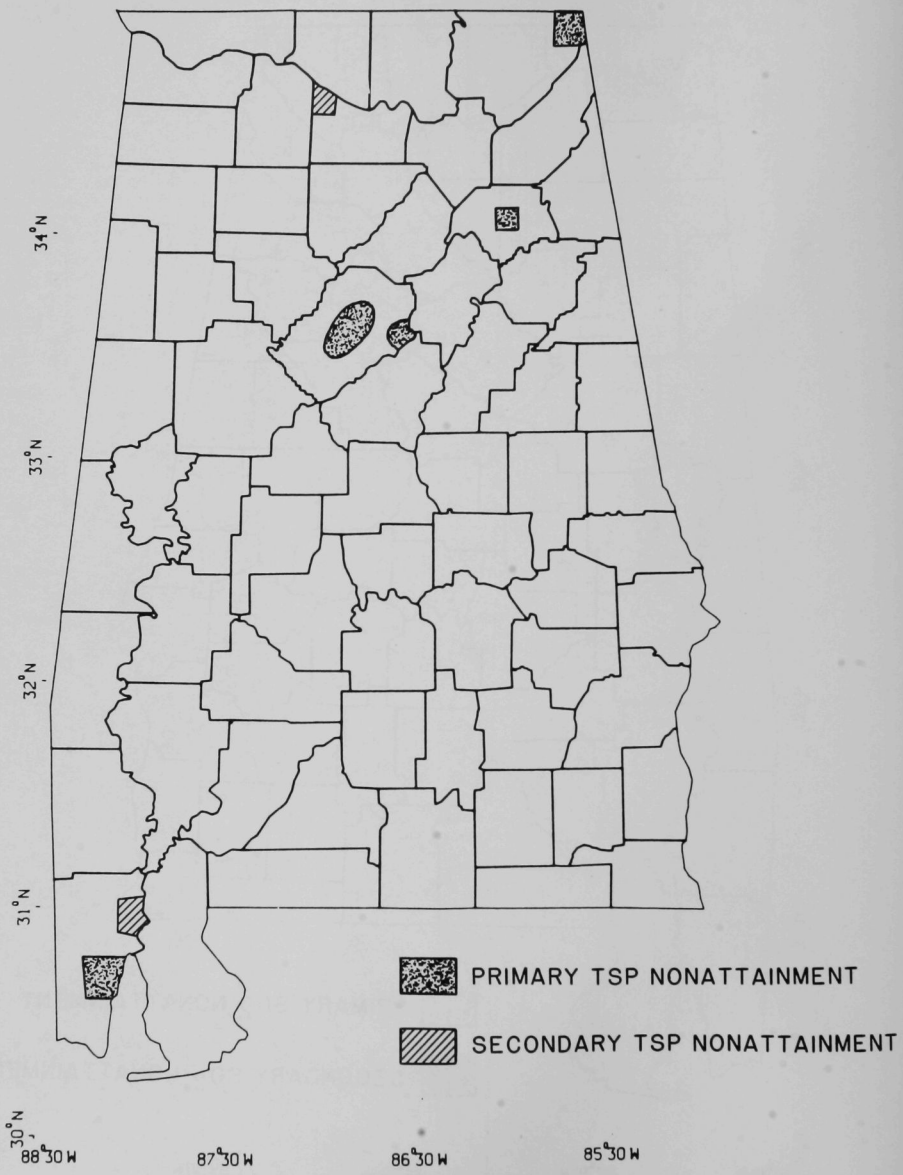


Fig. IV.2. Alabama: TSP Nonattainment Areas as Designated May 1979

Fig. IV.3. Alabama: O_x Nonattainment Areas as Designated May 1979

Table IV.1. Alabama: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$, or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	240	32.44	86.47	5. (1)						
2	260	30.55	87.71			115. (1)				
3	280	31.89	85.14			78. (1)				
4	400	33.96	86.46			99. (1)				
5	560	33.69	85.84			60. (1)				
6	560	33.66	85.82			79. (1)				
7	660	32.84	86.64			63. (1)				
8	680	32.21	88.05	29. (1)						
9	720	31.97	87.78			14. (1)				
10	720	31.69	87.77			36. (1)				
11	780	31.06	87.26	3. (1)						
12	800	34.74	87.88			115. (1)	32. (1)			
13	800	34.72	87.82			107. (1)	28. (1)			
15	800	34.76	87.66			144. (1)	46. (1)			
16	800	34.76	87.64			142. (1)	41. (1)			
18 *	800	0.0	0.0	135. (1)		129. (1)				
19	820	31.48	86.96			45. (1)				
20	880	31.31	86.49			40. (1)				
21	940	34.18	86.84			112. (1)				
22	1000	32.41	87.02			107. (1)				
23	1020	34.44	85.73			65. (1)				
24	1180	31.11	87.07			68. (1)				
25	1200	34.01	86.01			97. (1)				
27	1200	34.01	86.04			270. (3)				
28	1200	34.01	86.06			153. (1)				
29	1200	34.04	85.97			57. (1)				
30	1460	34.51	87.72			78. (1)				
31	1780	31.55	85.25			48. (1)				
32	1820	31.23	85.38	37. (1)		113. (1)				
33	1920	34.95	85.71			204. (2)	72. (2)			
34	1920	34.68	86.01			96. (1)				
35	1920	34.67	86.03			77. (1)				
36	1920	34.87	85.74			97. (1)				
37	1920	34.92	85.73			223. (2)	80. (3)			
38	1920	34.85	85.75	670. (4)		357. (4)				
39	1920	34.88	85.72			273. (3)	51. (1)			
40	1920	34.86	85.75			329. (4)	55. (1)			
41	1920	34.89	86.09			93. (1)	34. (1)			
42	1920	34.86	85.72			314. (3)	46. (1)			
44	1980	33.54	86.71			157. (1)				
45	1980	33.54	86.54	3. (1)	3. (1)	450. (4)	129. (4)	25. (1)		
46	1980	33.58	86.77	16. (1)		378. (4)	125. (4)			
47 *	1980	63.40	86.52			109. (1)				

Table IV.1. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
48	1980	33.53	86.85			454. (4)	132. (4)			
49	1980	33.58	86.73	36. (1)						
50	1980	33.61	86.69			107. (1)				
51	1980	33.58	86.73			147. (1)				
52	1980	33.53	86.79	66. (1)		189. (1)				
53	1980	33.56	86.78	67. (1)		201. (2)				
54	1980	33.52	86.80	21. (1)	5. (1)			53. (1)	9. (2)	247. (4)
55	1980	33.60	86.69			107. (1)				
56	1980	33.61	86.69	40. (1)						
57	1980	33.48	86.91			194. (1)	71. (2)			
58	1980	33.48	86.91						4. (1)	172. (3)
59	1980	33.48	86.91	139. (1)	14. (1)			36. (1)	14. (4)	269. (4)
60	1980	33.44	86.99	46. (1)		172. (1)				
61	1980	33.46	86.82	48. (1)		101. (1)				
63 *	1980	3.33	91.04	16. (1)	4. (1)	280. (3)	99. (4)	29. (1)		
64	1980	33.50	86.80	31. (1)		114. (1)				
65	1980	33.50	86.80	3. (1)		99. (1)				
67	1980	33.52	86.80			234. (2)	81. (3)		3. (1)	
68	1980	33.49	86.85			181. (1)				
69	1980	33.55	86.81			236. (2)				
70 *	1980	3.35	91.03	34. (1)	7. (1)	431. (4)	137. (4)	51. (1)	12. (3)	190. (3)
71	2080	34.80	87.68	24. (1)		157. (1)				
72	2080	34.81	87.63			126. (1)	45. (1)			
73	2080	34.77	87.84			95. (1)	31. (1)			
74	2100	34.48	87.29			110. (1)				
75	2120	32.65	85.39			84. (1)				
76	2160	34.80	86.96	24. (1)						
77	2160	34.82	86.97			136. (1)				
78	2160	34.80	86.96			116. (1)				
79	2160	34.82	86.97	26. (1)						
81	2260	34.73	86.58			146. (1)				
82	2260	34.79	86.61			77. (1)				
83	2260	34.73	86.58			82. (1)				
85	2260	34.69	86.58	3. (1)		145. (1)	49. (1)		9. (2)	196. (3)
86	2260	34.72	86.59	18. (1)						
87	2260	34.70	86.61			111. (1)				
88	2260	34.75	86.63			86. (1)				
89	2260	34.72	86.64			47. (1)				
90	2260	34.78	86.58			103. (1)				
91	2260	34.66	86.54			82. (1)				
92	2260	34.64	86.77			92. (1)				
93	2260	34.74	86.58	3. (1)						
94	2260	34.62	86.57			84. (1)				

Table IV.1. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
95	2280	32.52	87.83			92. (1)				
96	2340	34.34	86.31			118. (1)				
97	2400	30.77	88.07	52. (1)		188. (1)				
98	2400	30.69	88.05			291. (3)				
100	2400	30.72	88.06	252. (1)		252. (2)				190. (3)
101	2400	30.71	88.04			436. (4)				
102	2400	30.70	88.08	37. (1)		174. (1)				
103	2400	30.69	88.05	34. (1)	10. (1)	141. (1)	69. (2)	48. (1)		
104	2400	30.69	88.05	31. (1)						
105	2400	30.72	88.05			277. (3)				
106	2400	30.83	88.07			139. (1)				
107	2400	30.72	88.05	24. (1)						
108 *	2400	30.53	88.68	45. (1)		125. (1)				
109	2400	30.96	88.03	83. (1)		183. (1)				
110	2400	30.54	88.18	10. (1)		127. (1)				
111	2400	30.93	88.01	73. (1)		228. (2)				
112	2400	30.68	88.04	52. (1)		210. (2)			2. (1)	245. (4)
113	2400	30.64	88.06			131. (1)				
116	2480	32.37	86.32	18. (1)	5. (1)	65. (1)	37. (1)	39. (1)		
118	2480	32.43	86.29			77. (1)				
119	2430	32.41	86.29			156. (1)				
120	2520	34.60	86.99	34. (1)		400. (4)	79. (3)			
121	2520	34.43	86.94	37. (1)		84. (1)		30. (1)		
122	2520	34.62	87.00	47. (1)		163. (1)		26. (1)		
123	2520	34.62	87.03			130. (1)				
124	2520	34.62	87.03			137. (1)				
125	2520	34.58	86.99	5. (1)						
126	2800	31.80	85.96			59. (1)				
127	2920	32.48	85.00			92. (1)				
128	2960	33.59	86.29			181. (1)				
129	3060	33.17	86.59			106. (1)				
130	3080	32.57	88.25			84. (1)				
131	3140	33.16	86.25			88. (1)				
132	3140	33.43	86.11			139. (1)				
133	3140	33.26	86.34	13. (1)		164. (1)				
134	3160	32.93	85.94			61. (1)				
135	3300	33.22	87.54	5. (1)		173. (1)				
136	3380	33.84	87.28			156. (1)				

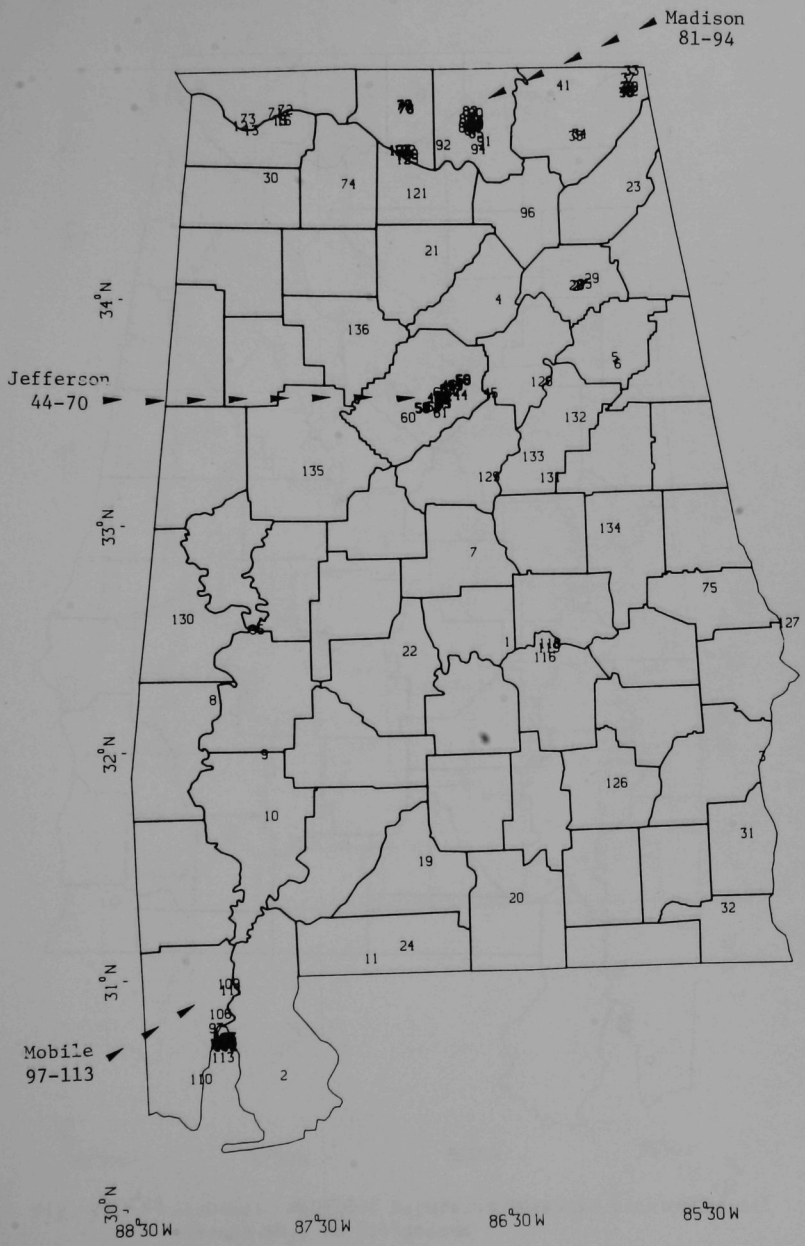


Fig. IV.4. Alabama: Locations of SAROAD Monitors (See Table IV.1 for Monitor Numbers)

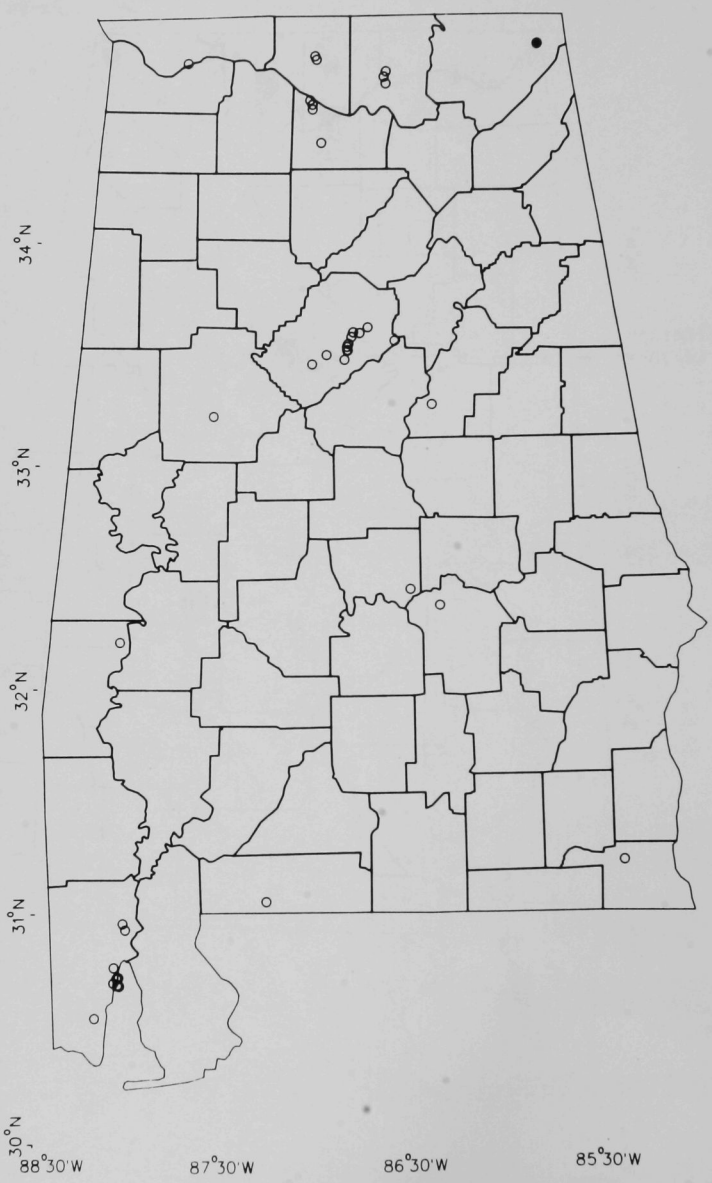


Fig. IV.5. Alabama: Monitors Reporting Adequate Data on 24-hr Average SO_2; Violations Shown by

Fig. IV.6. Alabama: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

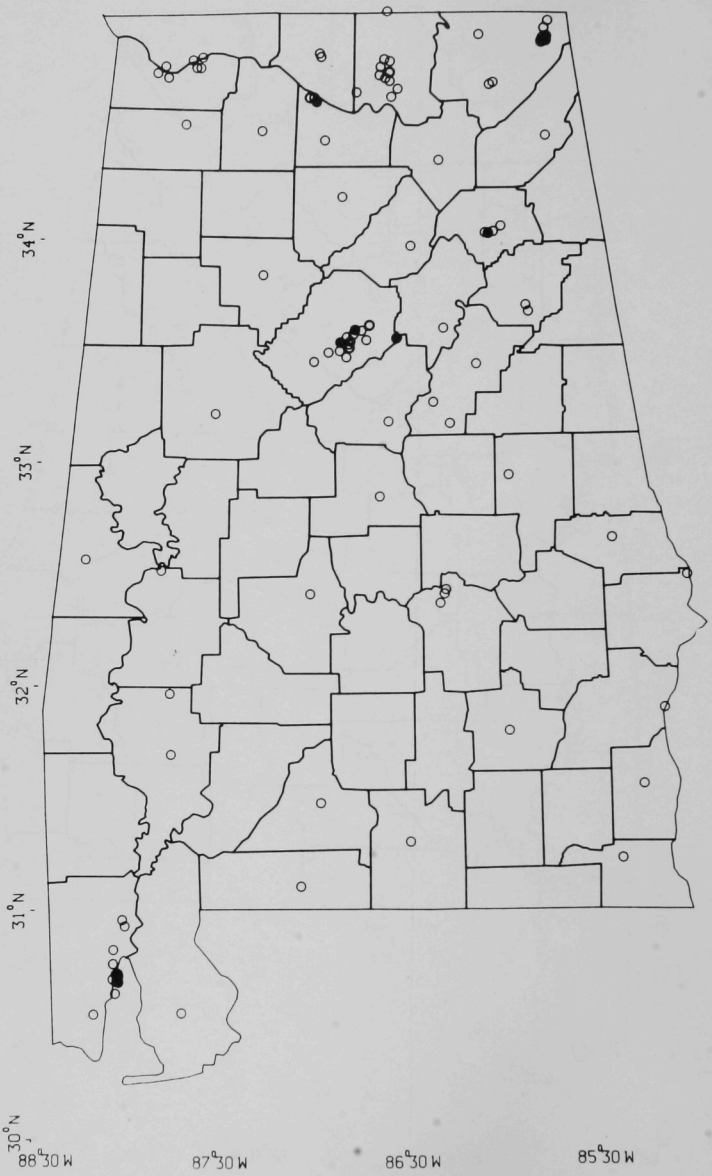


Fig. IV.7. Alabama: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

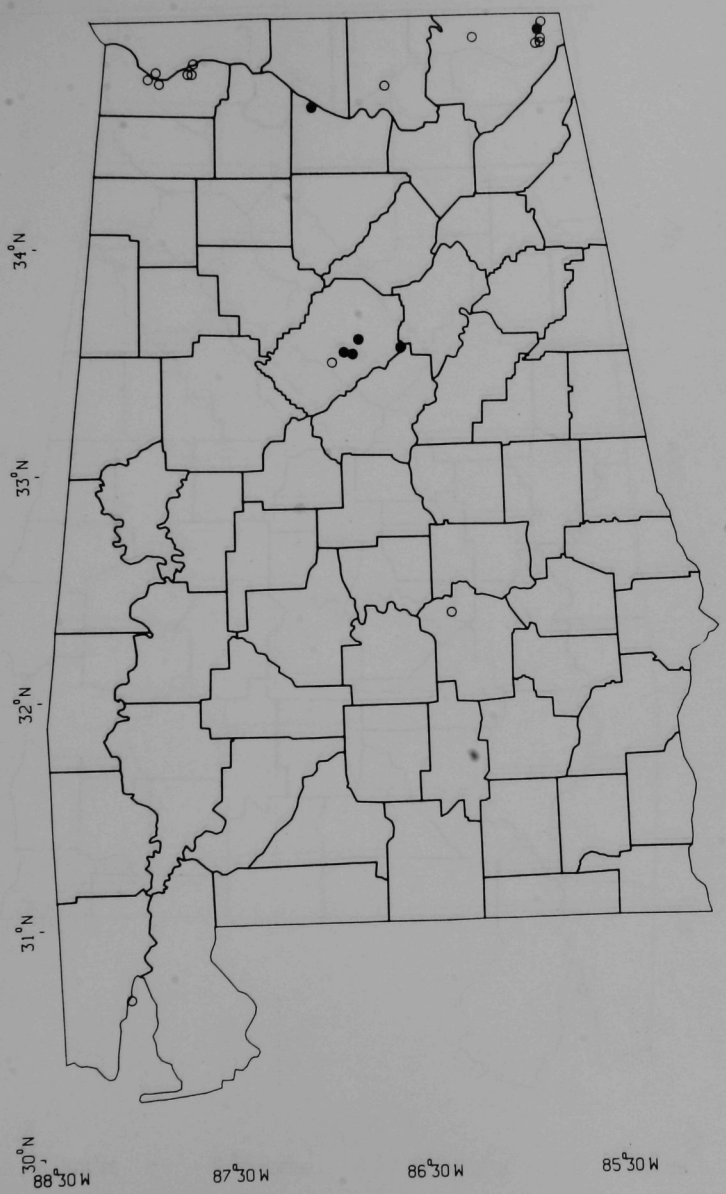


Fig. IV.8. Alabama: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

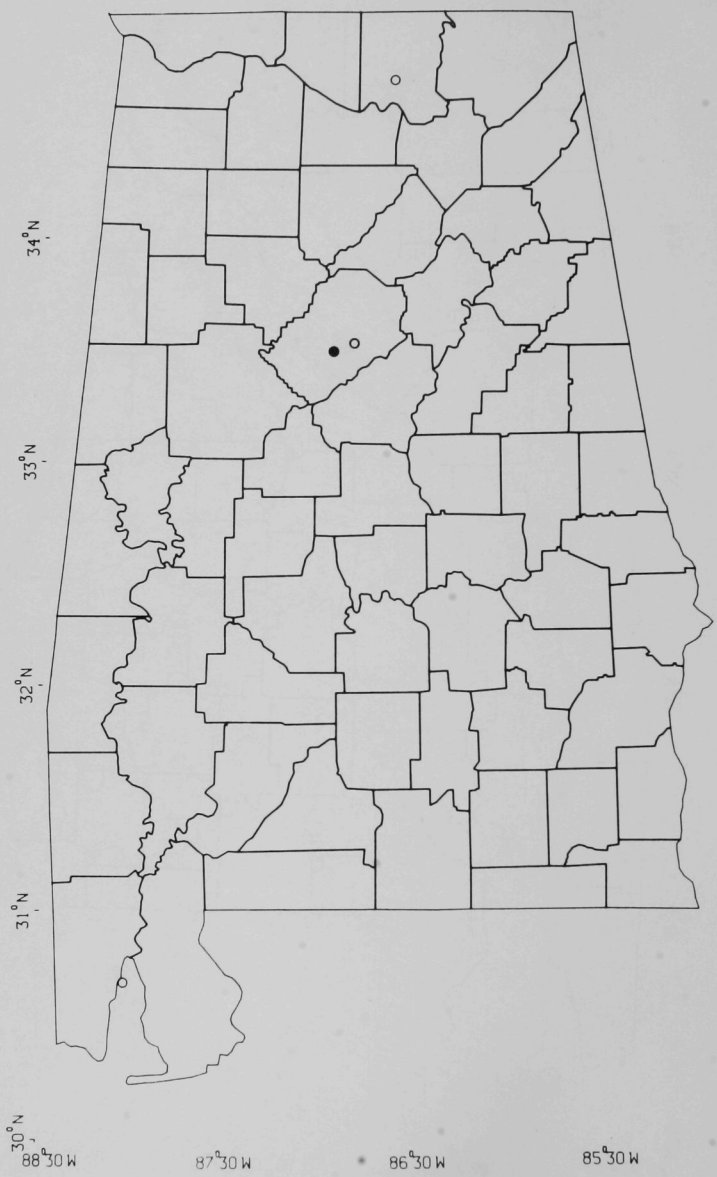


Fig. IV.9. Alabama: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

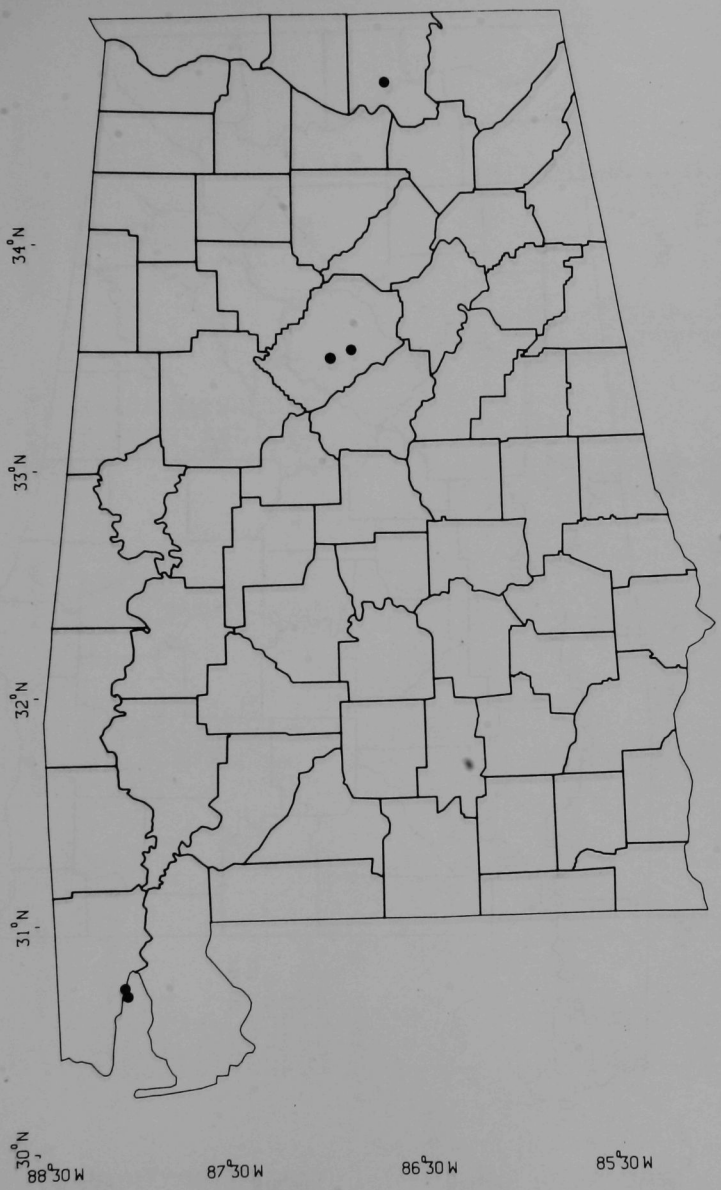


Fig. IV.10. Alabama: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

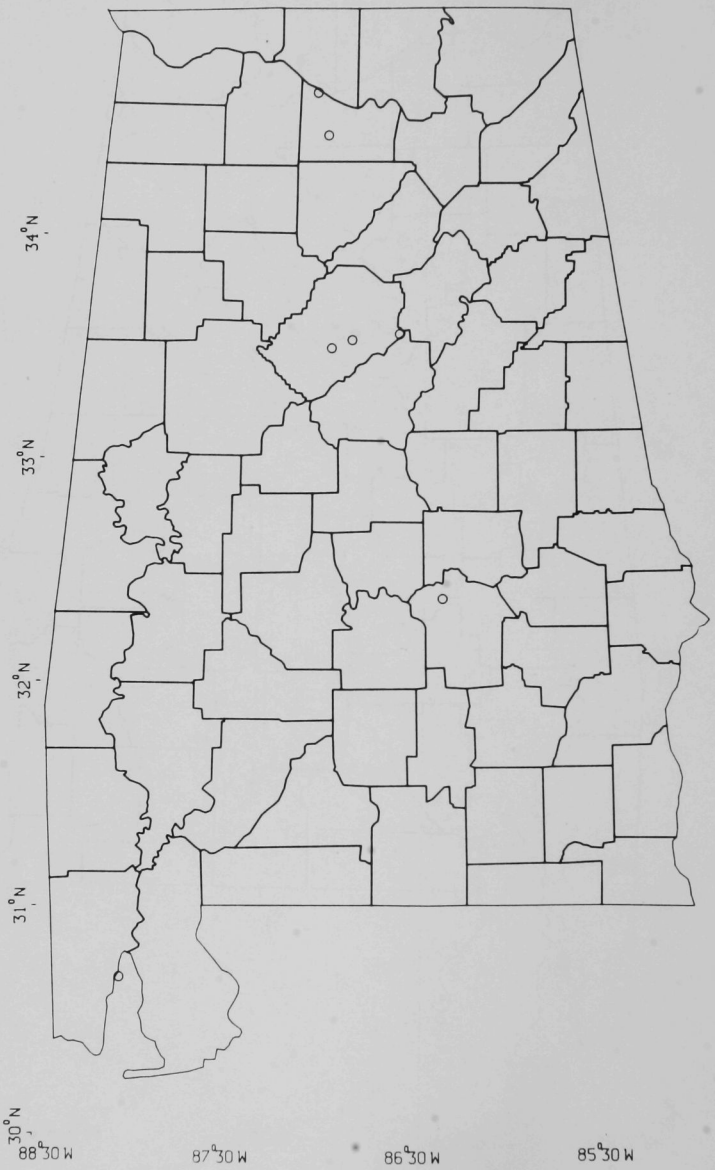


Fig. IV.11. Alabama: Monitors Reporting Adequate Data on Annual Average NO_x; Violations Shown by Shaded Circles

Table IV.2. Alabama: Power Plant and Fuel Use Data

ALABAMA — POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	BARRY	31.01	88.00	1770.80	0.0
2	N BROWNS FERRY NUCLEAR	34.81	86.97	2304.00	0.0
3	CHICKASAW	30.76	88.06	138.00	0.0
4	COLBERT A	34.74	87.85	846.50	0.0
5	COLBERT B	34.74	87.85	550.00	0.0
6	GADSDEN	34.01	85.97	138.00	0.0
7	GASTON	33.23	86.48	2012.80	0.0
8	GORGAS	33.64	87.20	1545.70	0.0
9	GREENE COUNTY	32.59	87.77	568.48	0.0
10	* JEFFERSON 1&2	0.0	0.0	27.20	0.0
11	MC WILLIAMS	31.26	86.46	40.00	25.00
12	TOMBIGBEE	31.41	88.21	75.00	0.0
13	WIDOWS CREEK A	34.88	85.75	852.98	0.0
14	WIDOWS CREEK B	34.88	85.75	1125.01	0.0

N NUCLEAR * NOT PLOTTED

ALABAMA — FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	BARRY	1.40	3827.32	0.50	211.58	1593.65
2	N BROWNS FERRY NUCLEAR	0.0	0.0	0.0	0.0	0.0
3	CHICKASAW	1.62	75.26	0.50	110.30	1813.12
4	COLBERT A	4.08	1970.20	0.20	8.83	0.0
5	COLBERT B	3.95	141.20	0.20	2.13	0.0
6	GADSDEN	1.34	223.01	0.50	4.43	221.55
7	GASTON	1.86	3631.48	0.50	95.71	0.0
8	GORGAS	1.62	3090.68	0.50	58.94	0.0
9	GREENE COUNTY	2.43	1080.26	0.50	26.92	0.0
10	* JEFFERSON 1&2	0.0	0.0	0.0	0.0	0.0
11	MC WILLIAMS	1.79	18.29	0.0	0.0	2370.17
12	TOMBIGBEE	0.99	67.40	0.40	2.31	0.0
13	WIDOWS CREEK A	3.04	1843.10	0.10	18.84	0.0
14	WIDOWS CREEK B	3.54	2025.50	0.10	19.26	0.0

N NUCLEAR * NOT PLOTTED

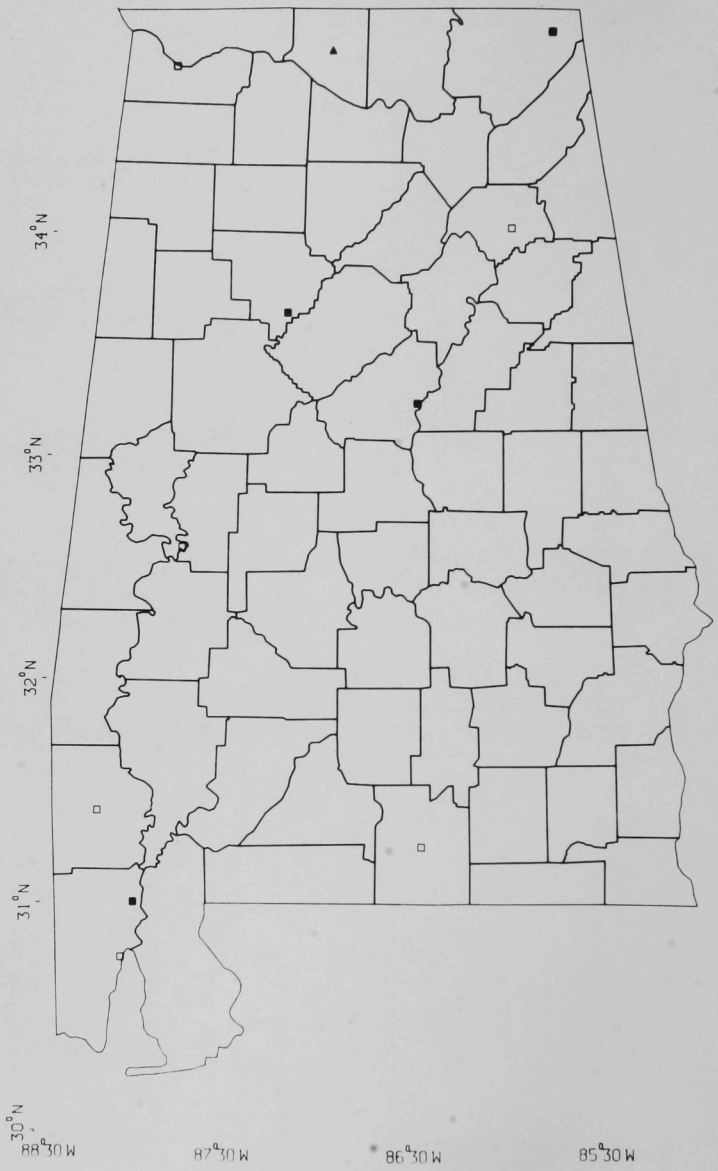


Fig. IV.12. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open, <1000 MW. Triangle = Nuclear)

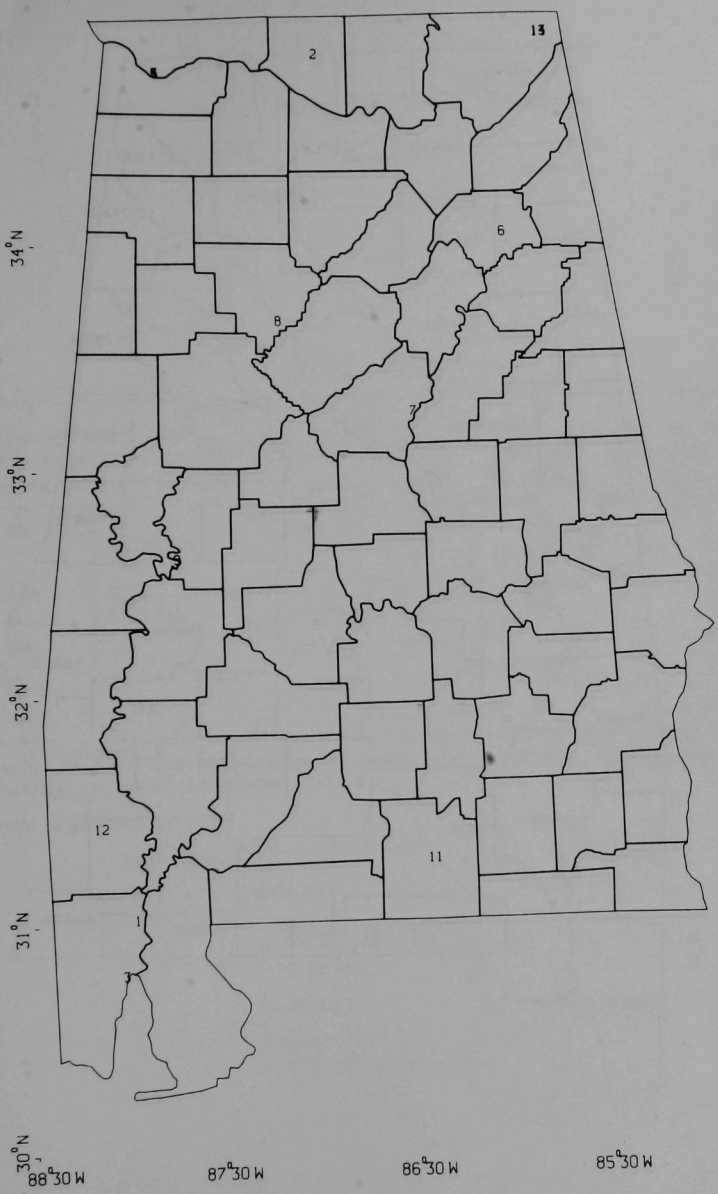


Fig. IV.13. Power Plant Key (See Table IV.2 for Identification and Fuel Use Data)

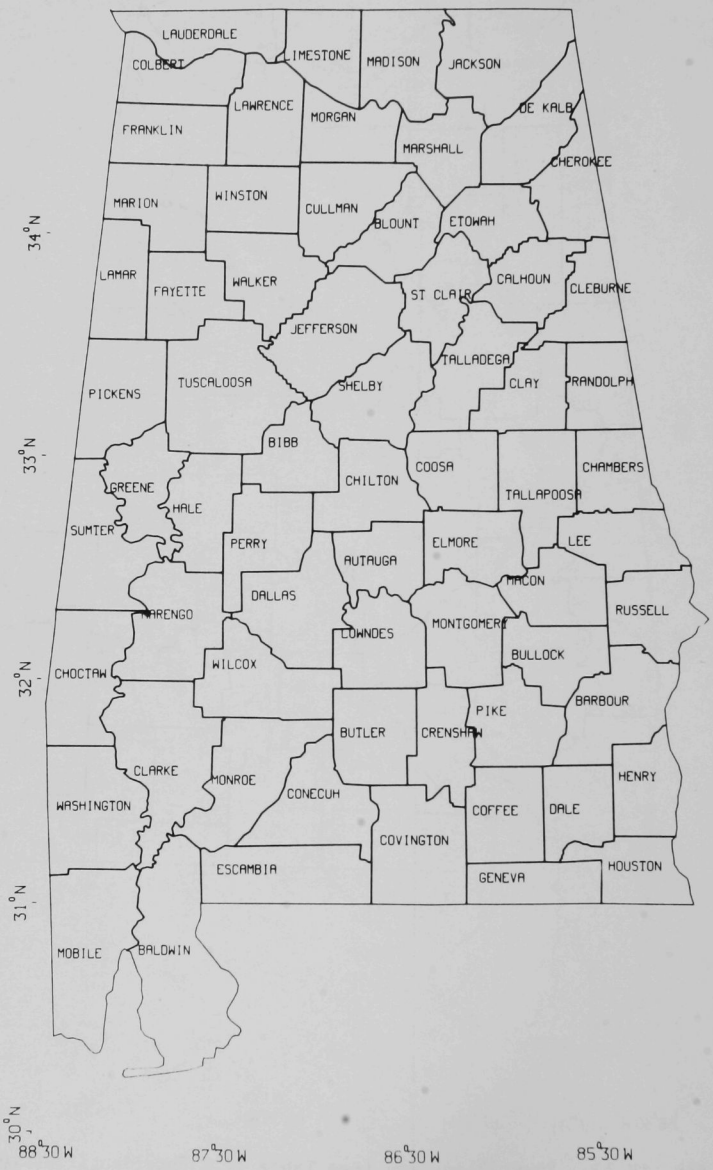


Fig. IV.14. Alabama: Key to Counties

REGION IV: FLORIDA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	1	0	103	0
	1 yr			6	0
TSP	24 hr	0	2	164	0
	1 yr			12	0
NO_x	1 yr	0[b]	-	4	0
CO	8 hr	1	-	10	3
O_x	1 hr	6	-	13	9

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	41
Nuclear	1
Total	42

FLORIDA: Final SIP, 3/79

I. SOURCES OF THE PROBLEM

Florida has designated portions of Duval and Hillsborough counties (containing the cities of Tampa and Jacksonville) as in nonattainment for TSP secondary standards. The state believes that stack emissions from major stationary sources are already adequately controlled and that the violations are the result of fugitive industrial process emissions and fugitive urban dust. There is one SO_2 nonattainment area in the northwest corner of Pinellas County. A kiln belonging to Stauffer Chemicals is the significant source of SO_2 emissions, with contributions from the Florida Power Co.'s Anclote Steam Plant.

The entire county of Broward (north of the Miami area, including Fort Lauderdale) is in nonattainment for CO, with 98% of emissions attributed to motor vehicles. The counties of Broward, Dade, Duval, Escambia, Hillsborough, Leon, Orange, Palm Beach, and Pinellas have all been designated as nonattainment for oxidants, as a result of emissions from motor vehicles and stationary sources of VOC.

II. ATTAINMENT STRATEGIES

A. SO_2

1. Emissions from Stauffer Chemical Co.'s kiln to be controlled

   a. Raising stack height and decreasing diameter of stack

   b. Continuing to use wet scrubbers, with better control of malfunctions

2. Jacksonville (Duval Co.)

   a. Control strategy for nonindustrial sources (such as traffic-generated dust) to be developed

   b. Emission inventory for fugitive sources of particulates to be completed

   c. Jacksonville shipyards are a major industrial fugitive dust source

      - from blasting surfaces of ships
      - control measures to be developed

3. Tampa (Hillsborough Co.)

   a. Major sources in compliance with emission limits

      - except city of Tampa's municipal incinerator
      - incinerator under an enforcement order, with scheduled shutdown in 1980

   b. Portland Cement Co. and Florida Steel Corp. are sources of fugitive particulates

      - controls to be developed

   c. Traffic-related dust

      - controls to be studied

B. TSP

   1. Violation of the secondary standard

      a. Seek an 18-month extension for submittal of a plan

      b. Existing stationary sources already controlled to RACT level

C. CO

   1. Attainment predicted for 1987

   2. No specific control measures needed beyond:

      a. FMVECP

      b. Transportation improvement measures for O_x

      c. Inspection and maintenance programs for vehicles to control O_x

D. O_x

   1. Two nonattainment areas (Escambia and Leon Co.) are rural

      a. Controls to be required for stationary sources of VOC

      b. RACT adopted, in accordance with the EPA's control technique guidances

2. Remaining seven nonattainment areas are urban

   a. RACT on stationary sources

   b. Vehicle inspection and maintenance

   c. FMVECP

   d. Transportation control measures to reduce vehicle miles travelled

   e. Commitment to improved mass transit

III. NEW SOURCE REVIEW

Florida established rules providing for a growth allowance concept with emission offsets as a back-up for all new sources in nonattainment areas. However, a growth allowance was only established for urban O_x nonattainment areas. According to the regulations, the state will calculate the allowance available to the new source at the same time that the LAER is determined. This allowance will be based on (1) the initial allowance; (2) plus increments from permanent shutdowns; (3) minus the sum of allowances already allocated either by construction permit or LAER determination. The new source may use up the available allowance. Offsets of greater than 1:1 are required for emissions in excess of the available allowance, and the new source has one year to find offsets or lose the growth allowance.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. For new sources with fuel input > 250 MM Btu per hr

   a. Solid Fuel: 1.2 lb of SO_2 per MM Btu

   b. Liquid Fuel: 0.8 lb of SO_2 per MM Btu

2. For existing sources with fuel input > 250 MMBtu per hr

   a. Oil-fired:

      - Duval Co.: 2.8 lb of SO_2 per MM Btu, except for Jacksonville area, where the limit is 1.65 lb of SO_2
      - Escambia Co.: 1.89 lb of SO_2 per MM Btu
      - Leon and Wakulla Co.: 1.87 lb of SO_2
      - Hillsborough, Dade, Broward and Palm Beach Co.: 1.1 lb of SO_2
      - all other areas: 2.75 lb of SO_2 per MM Btu

b. Coal-fired:

- Tampa: 2.4 lb of SO_2 per MM Btu
- Escambia: 5.9 lb of SO_2
- all other areas: 6.17 lb of SO_2

3. For all sources, new and existing, with fuel input < 250 MM Btu per hr

   a. Latest technology as determined to be BACT by the state agency

   b. Except existing sources that have already received a determination of latest RACT

B. TSP

1. New and existing fossil fuel steam generators with fuel input > 250 MM Btu per hr:

   0.1 lb PM per MMBtu

2. New and existing fossil fuel steam generators with fuel input < 250 MM Btu per hr:

   a. Latest technology as determined to be BACT by the state agency

   b. Except existing sources that have already received a determination of latest RACT

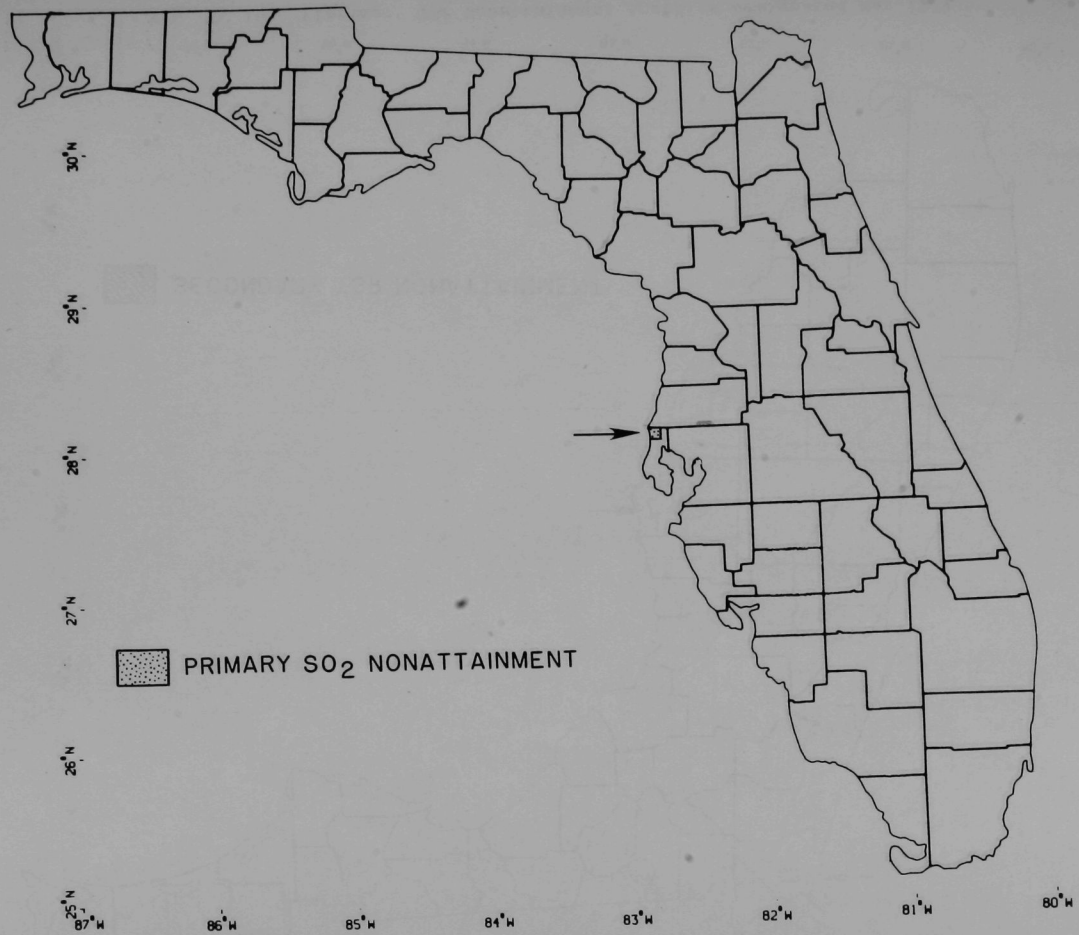


Fig. IV.15. Florida: SO_2 Nonattainment Areas as Designated May 1979

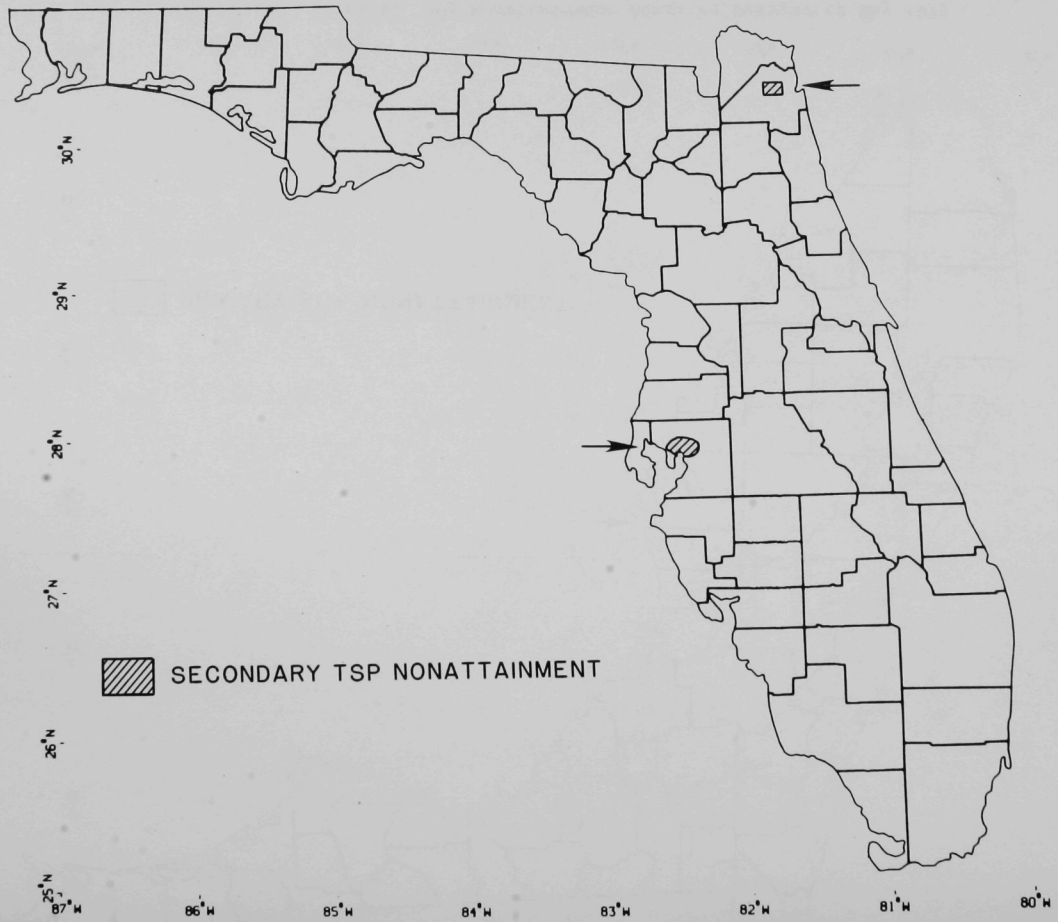


Fig. IV.16. Florida: TSP Nonattainment Areas as Designated May 1979

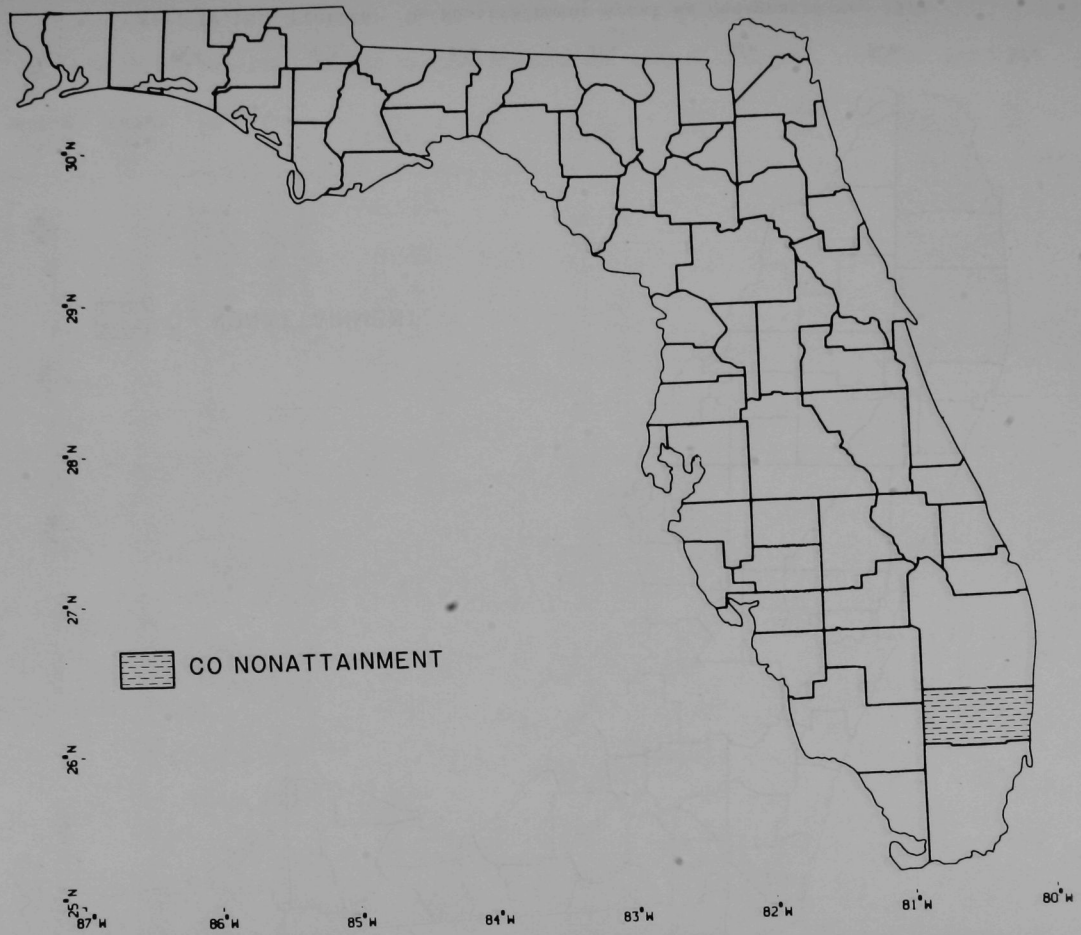


Fig. IV.17. Florida: CO Nonattainment Areas as Designated May 1979

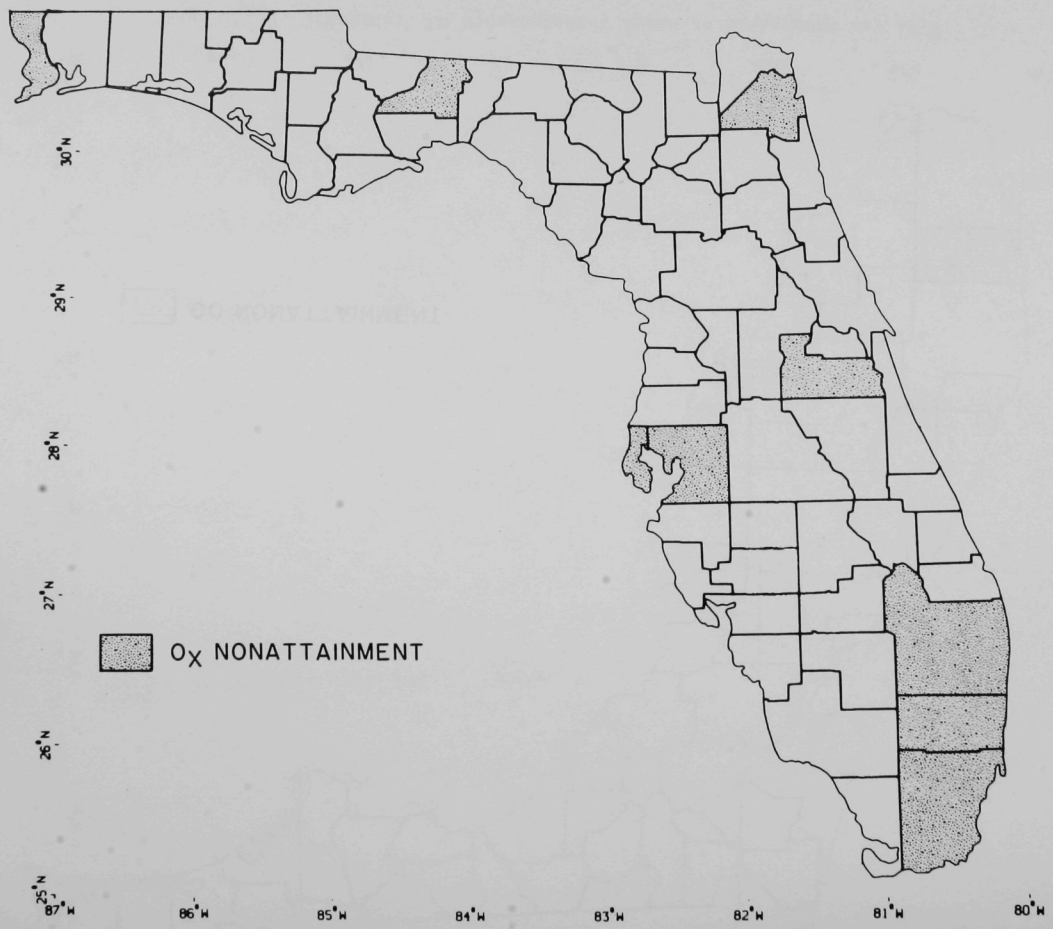


Fig. IV.18. Florida: O_X Nonattainment Areas as Designated May 1979

Table IV.3. Florida: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$, or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	20	29.67	82.33	15. (1)		67. (1)				
2	20	29.64	82.35			59. (1)				
3	20	29.70	82.36			68. (1)				
4	20	29.74	82.35	11. (1)	4. (1)	53. (1)				
5	20	29.75	82.40	11. (1)		51. (1)				
6	20	29.68	82.29	8. (1)		74. (1)				
7	20	29.63	82.30	17. (1)		81. (1)				
8	20	29.66	82.33			99. (1)				
9	200	30.21	85.68	16. (1)		45. (1)				
10	200	30.15	85.61			61. (1)				
11 *	380	0.0	0.0			32. (1)				
12 *	380	0.0	0.0	16. (1)		39. (1)				
13	380	28.62	80.84			34. (1)				
14	420	26.20	80.25			80. (1)				
15	420	26.13	80.17	10. (1)		87. (1)			7. (1)	
16	420	26.08	80.24	10. (1)		57. (1)				
17	420	26.07	80.23	21. (1)		36. (1)				
18	420	25.99	80.18			90. (1)				
19	420	26.01	80.18			97. (1)				
20	420	26.24	80.21			63. (1)				
21	420	26.17	80.20	24. (1)		87. (1)			11. (3)	196. (3)
22	420	26.02	80.25	10. (1)		42. (1)				
23	420	26.24	80.12			69. (1)				
24	420	26.29	80.10			105. (1)				
25	420	26.14	80.24			124. (1)				
26	520	26.93	82.01			56. (1)				
27 *	580	0.0	0.0	10. (1)		91. (1)				
28	600	29.99	81.63			80. (1)	43. (1)			
29	740	26.13	81.77			23. (1)				
30	740	26.13	81.77	9. (1)		42. (1)				
31	860	25.93	80.16			58. (1)				
33 *	860	24.02	80.25			114. (1)				
34	860	25.93	80.16	7. (1)						
35	860	25.82	80.28			71. (1)				
36	860	25.80	80.13	3. (1)		45. (1)				29. (1)
37	860	25.83	80.24							
38	860	25.81	80.21			78. (1)				
39	860	25.80	80.21	5. (1)		96. (1)	57. (2)			
41	860	25.80	80.21	3. (1)		77. (1)				
43	860	25.61	80.35	9. (1)		61. (1)				
45	860	25.87	80.28			97. (1)				
46	860	25.47	80.48			85. (1)				
47	860	25.87	80.34			93. (1)				
48	860	25.73	80.24			71. (1)				

Table IV.3. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
49	860	25.71	80.34			79. (1)				
50	860	25.79	80.28	8. (1)		70. (1)				
51 *	860	0.0	0.0			123. (1)				
52	860	25.93	80.26			83. (1)				
53	860	25.89	80.13			75. (1)	45. (1)			
54	860	25.76	80.30			78. (1)				
55	1020	27.21	81.86	6. (1)		80. (1)				
57 *	1080	0.0	0.0	58. (1)	19. (1)	81. (1)	57. (2)			
59	1080	30.44	81.63			71. (1)				
60	1080	30.33	81.60	32. (1)		78. (1)				
61	1080	30.32	81.64	83. (1)		237. (2)	71. (2)			
62 *	1080	0.0	0.0					59. (1)		
63	1080	30.22	81.67							245. (4)
64	1080	30.35	81.63	3. (1)		115. (1)				
65	1080	30.24	81.69							118. (1)
66	1080	30.34	81.66	111. (1)		77. (1)				
67	1080	30.33	81.66						13. (4)	118. (1)
68	1080	30.35	81.61	34. (1)		62. (1)				
69	1080	30.31	81.78			52. (1)				
70	1080	30.31	81.51	3. (1)		41. (1)				
71	1080	30.31	81.51			19. (1)				
72	1080	30.31	81.74	28. (1)		87. (1)				
73	1080	30.32	81.68	32. (1)		83. (1)				
74	1080	30.31	81.65	51. (1)		94. (1)				
75	1080	30.33	81.66	50. (1)		98. (1)				
76	1080	30.36	81.66	119. (1)						
77	1080	30.44	81.63	32. (1)						
78	1160	30.44	87.22	12. (1)		89. (1)				
79	1160	30.55	87.23	14. (1)		48. (1)				
81	1160	30.53	87.20			88. (1)			3. (1)	153. (2)
82	1160	31.06	87.26	3. (1)						
83	1160	30.61	87.32			90. (1)				
84	1520	26.83	81.09	9. (1)		66. (1)				
85	1580	29.83	85.30			138. (1)				
86	1680	27.50	81.78	12. (1)		65. (1)		13. (1)		
88	1720	26.75	80.94	3. (1)		74. (1)				
89	1720	26.75	80.94	3. (1)		46. (1)				
90	1740	28.55	82.40	29. (1)		89. (1)				
91	1780	27.51	81.44	8. (1)		60. (1)				
92	1780	27.18	81.35			53. (1)	21. (1)			
93	1800	27.72	82.43	55. (1)		63. (1)				
94	1800	27.89	82.37			65. (1)				
95	1800	27.79	82.36			65. (1)				
96	1800	27.72	82.34			58. (1)				
97	1800	28.13	82.58			58. (1)				

Table IV.3. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
98	1800	27.88	82.06			55. (1)				235. (4)
99	1800	28.03	82.57							
100	1800	27.89	82.40	47. (1)		69. (1)				
101	1800	27.86	82.38	84. (1)						
102	1800	27.94	82.40	21. (1)		115. (1)				
103	1800	27.86	82.38	45. (1)						
104	1800	27.87	82.07	94. (1)	12. (1)					
106	1800	27.97	82.52			81. (1)				
107	1800	27.95	82.46	106. (1)		87. (1)		45. (1)		
108	1800	27.95	82.46	215. (1)		112. (1)				
110	1800	27.93	82.45	138. (1)		131. (1)			4. (1)	
111	1800	27.83	82.47	13. (1)		59. (1)				
112	1800	27.93	82.51	81. (1)		93. (1)				
113	1800	27.95	82.43	97. (1)		117. (1)				
114	1800	27.95	82.51						10. (3)	216. (4)
115 *	1800	27.95	83.45			142. (1)	65. (2)			
116	1800	27.95	82.45	297. (2)		105. (1)				
117	1800	27.96	82.37			108. (1)				
118	1800	28.04	82.39			61. (1)	40. (1)			
119	1800	27.93	82.45							274. (4)
120	1800	27.94	82.28	8. (1)		92. (1)	46. (1)			
121	1800	28.02	82.12			87. (1)				
122 *	1920	27.61	80.23			66. (1)				
123	2280	26.65	81.87	10. (1)		109. (1)				
124	2280	26.65	81.87	3. (1)		37. (1)			1. (1)	192. (3)
125	2340	30.49	84.29							
126	2340	30.44	84.28			121. (1)				
127	2340	30.44	84.29			84. (1)				
128	2540	27.46	82.57			81. (1)				
129 *	2540	0.0	0.0	15. (1)		68. (1)				
130	2540	27.58	82.42	6. (1)		66. (1)				
131	2540	27.49	82.62			82. (1)				
132	2540	27.51	82.71	13. (1)		67. (1)				
133	2540	27.62	82.52	3. (1)						
134	2540	27.64	82.56	7. (1)		91. (1)				
136	2540	27.41	82.56	19. (1)		86. (1)				
137	2540	27.50	82.36	14. (1)		44. (1)				
139	2540	27.60	82.51	10. (1)		39. (1)				
140	2540	27.62	82.54	18. (1)		81. (1)				
141	2540	27.64	82.52	15. (1)		79. (1)				
142	2620	27.19	80.24			166. (1)				
143	2920	30.67	81.45			87. (1)	41. (1)			
144	2920	30.66	81.46			82. (1)				
145	2920	30.66	81.46			86. (1)				
146	3200	27.29	80.83			31. (1)				

Table IV.3. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
147	3240	28.54	81.39			63. (1)				
148	3240	28.56	81.34	16. (1)		54. (1)				
149	3420	26.52	80.13			47. (1)				
150	3420	26.68	80.21			67. (1)				
151	3420	26.70	80.38			66. (1)				
152	3420	26.66	80.11			56. (1)				
153	3420	26.76	80.12			48. (1)				
154	3420	26.81	80.07			55. (1)				
155	3420	26.61	80.07			98. (1)				
156	3420	26.47	80.07			81. (1)				
157	3420	26.96	80.09			60. (1)				
158	3420	26.71	80.06	31. (1)		79. (1)			5. (1)	
160	3420	26.71	80.06							190. (3)
162	3420	26.38	80.12			54. (1)				
163	3420	26.36	80.08			68. (1)				
164	3420	26.70	80.67	61. (1)						
165	3420	26.70	80.67			107. (1)				
166	3600	27.96	82.71	24. (1)		110. (1)				
168	3600	27.78	82.66			189. (1)				
169	3600	27.76	82.66	55. (1)		135. (1)				
170 *	3600	0.0	0.0	77. (1)	22. (1)	98. (1)	45. (1)	32. (1)		
171	3600	27.74	82.68	6. (1)		65. (1)				
172	3600	27.79	82.74			48. (1)			2. (1)	172. (3)
173	3600	27.79	82.74	22. (1)		107. (1)				
174	3600	27.78	82.69	79. (1)		75. (1)				
175	3600	27.74	82.62	37. (1)		88. (1)				
176	3600	27.83	82.65	73. (1)		90. (1)				
177	3600	27.78	82.66						5. (1)	231. (4)
178	3680	27.89	81.93	211. (1)		117. (1)				
179	3680	27.76	81.84	117. (1)	11. (1)	150. (1)				
181	3680	28.09	81.94	96. (1)		97. (1)				
182	3680	27.97	81.95	181. (1)	16. (1)	112. (1)				
184	3680	27.89	81.97	6. (1)		116. (1)				
185	3680	27.91	81.84	37. (1)		158. (1)				
186	3780	29.66	81.69			61. (1)	33. (1)			
187	3780	29.66	81.65			63. (1)				
188	3960	27.45	80.32			57. (1)				
189	3960	27.45	80.32			106. (1)				
190	3960	27.45	80.33			95. (1)				
191	3960	27.44	80.35			88. (1)				
192	3960	27.45	80.32			68. (1)				
193	3960	27.44	80.33	3. (1)		67. (1)				
194	4060	30.35	87.18	65. (1)		65. (1)				
195	4060	31.01	87.21	17. (1)						

Table IV.3. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
196	4060	30.99	87.15	15. (1)						
197	4060	30.92	87.18	30. (1)						
198	4060	30.95	87.16	25. (1)						
199	4060	31.02	87.18	8. (1)						
200	4060	30.95	87.18	21. (1)						
202	4060	30.83	87.12	10. (1)						
203	4060	30.85	87.10	3. (1)						
204	4060	30.95	87.15	19. (1)		95. (1)				
205	4060	30.94	87.14	47. (1)						
206	4060	30.90	87.16	20. (1)						
208	4100	27.16	82.09	3. (1)		62. (1)				
209	4100	27.34	82.53			77. (1)				
210	4100	27.39	82.56	5. (1)		172. (1)				
211	4100	27.32	82.45	5. (1)		55. (1)				
212	4140	28.81	81.27	13. (1)		64. (1)				
213	4420	30.13	83.56			58. (1)				

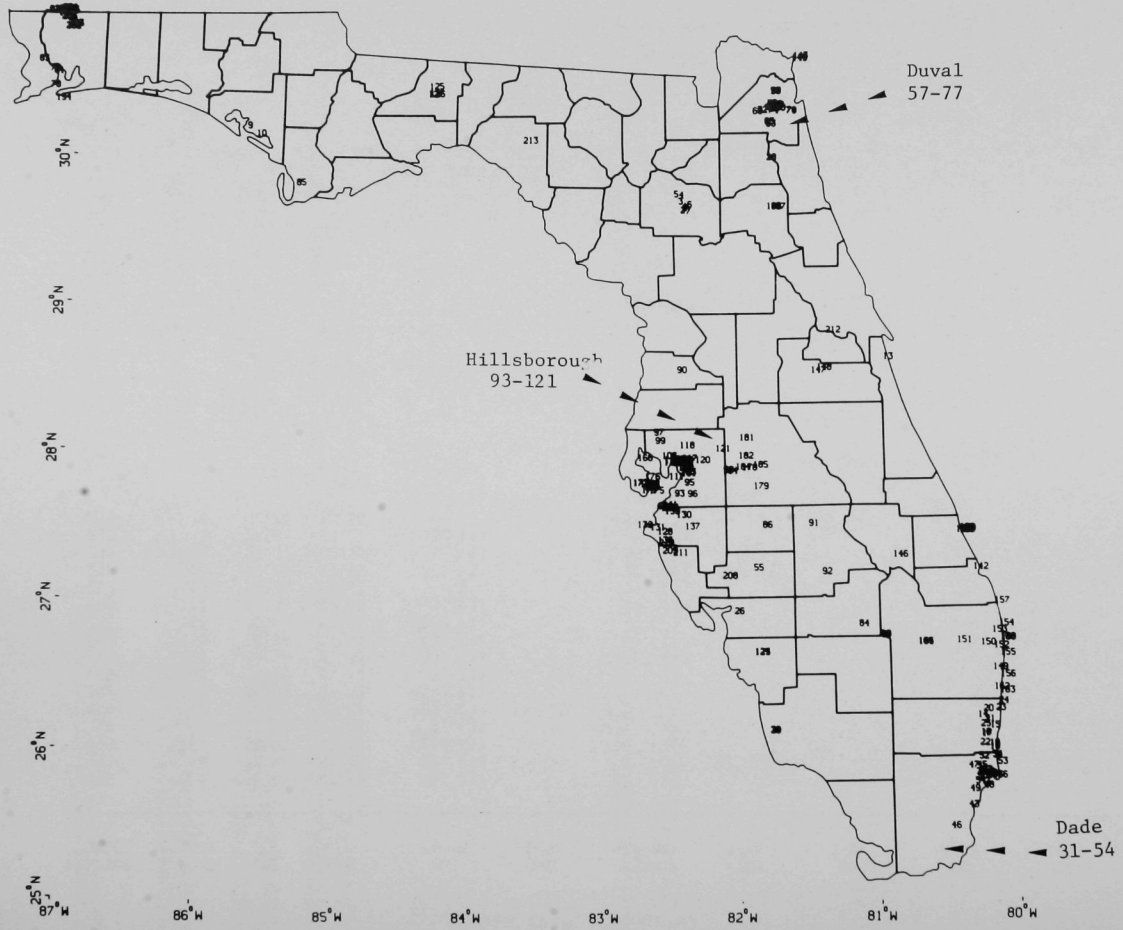


Fig. IV.19. Florida: Locations of SAROAD Monitors (See Table IV.3 for Monitor Numbers)

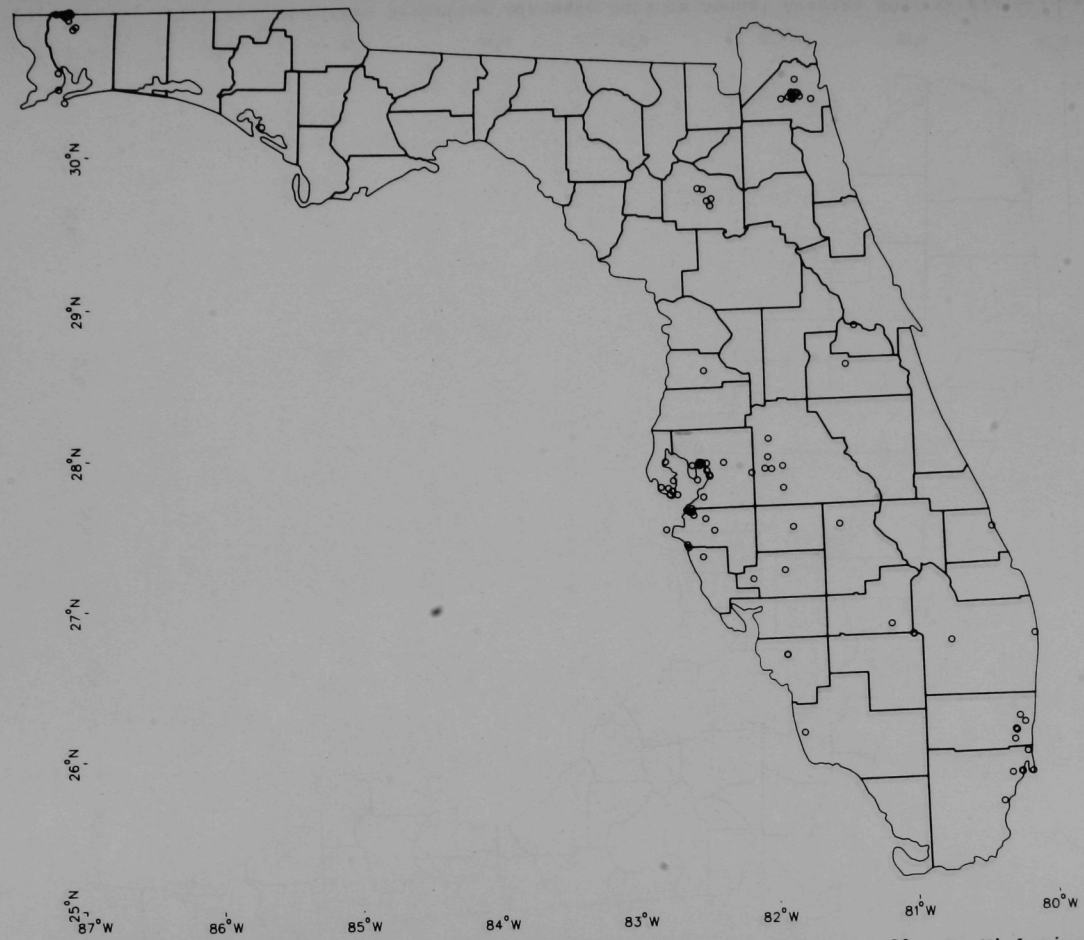


Fig. IV.20. Florida: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

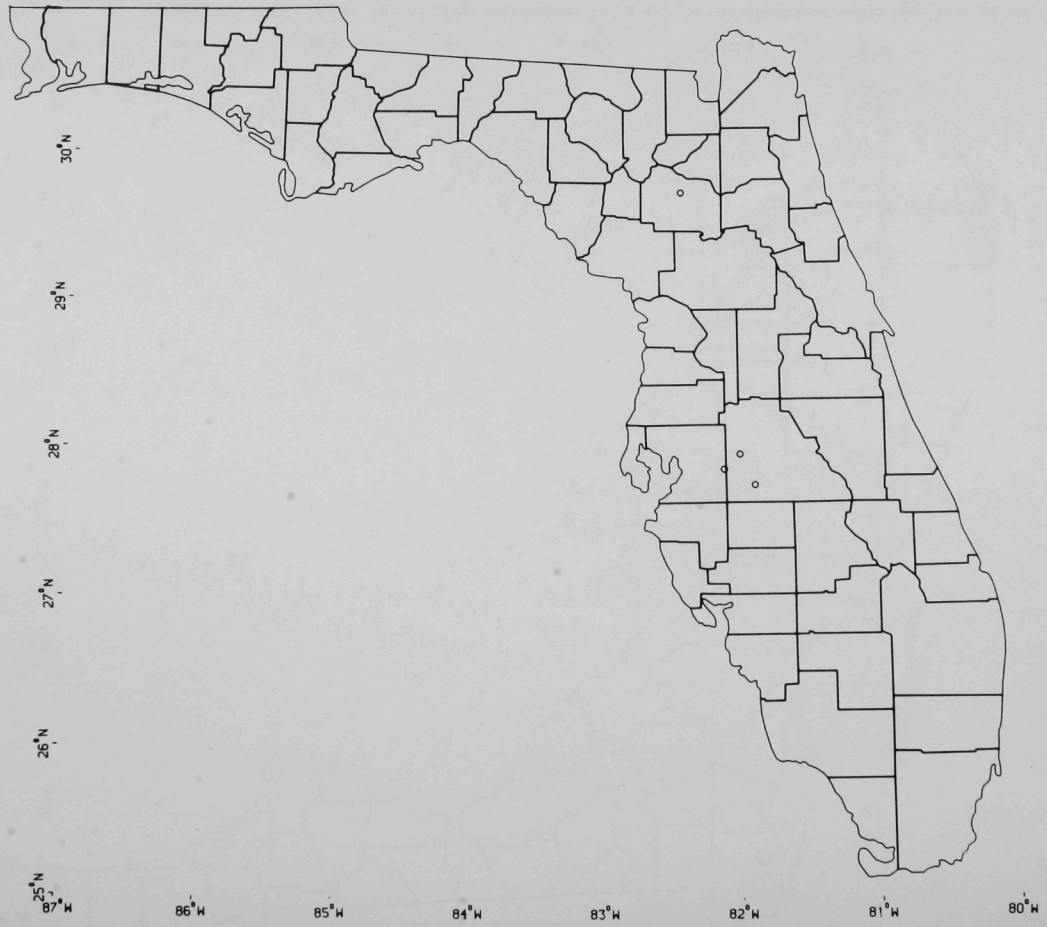


Fig. IV.21. Florida: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

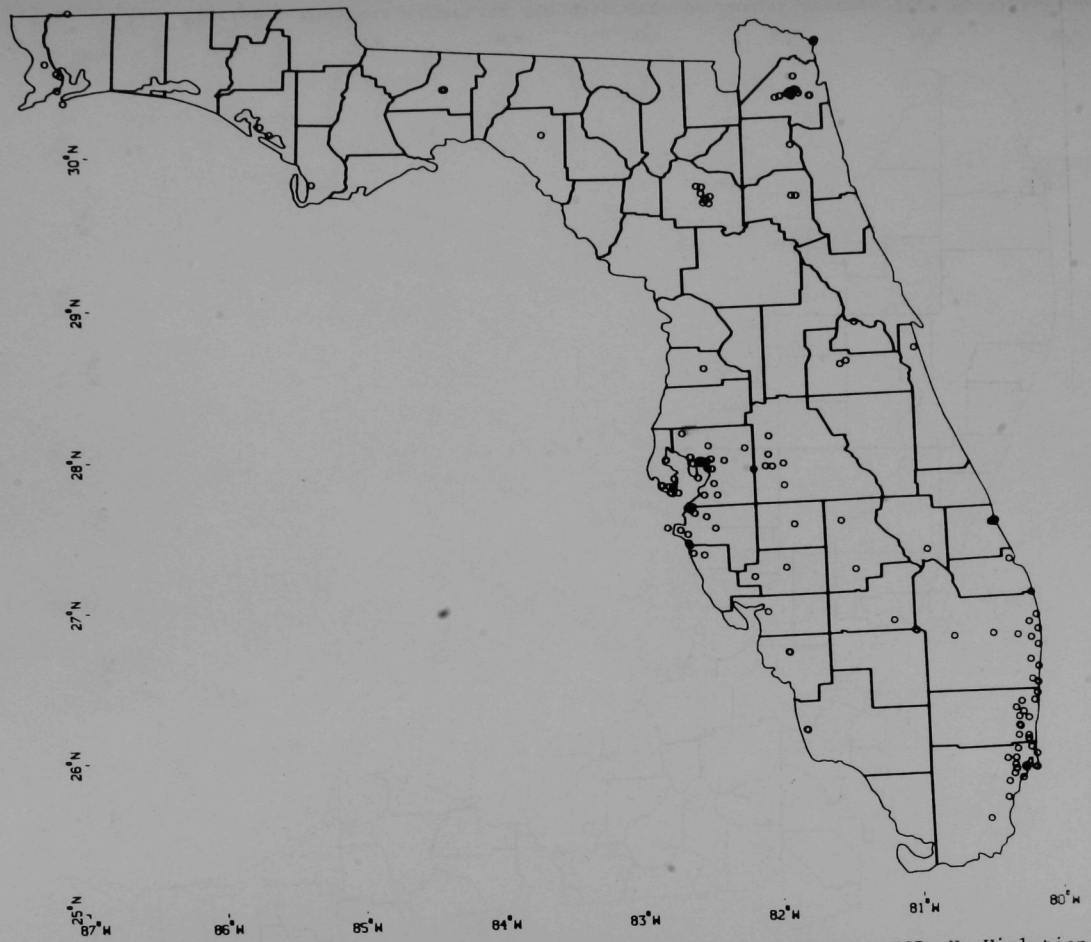


Fig. IV.22. Florida: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

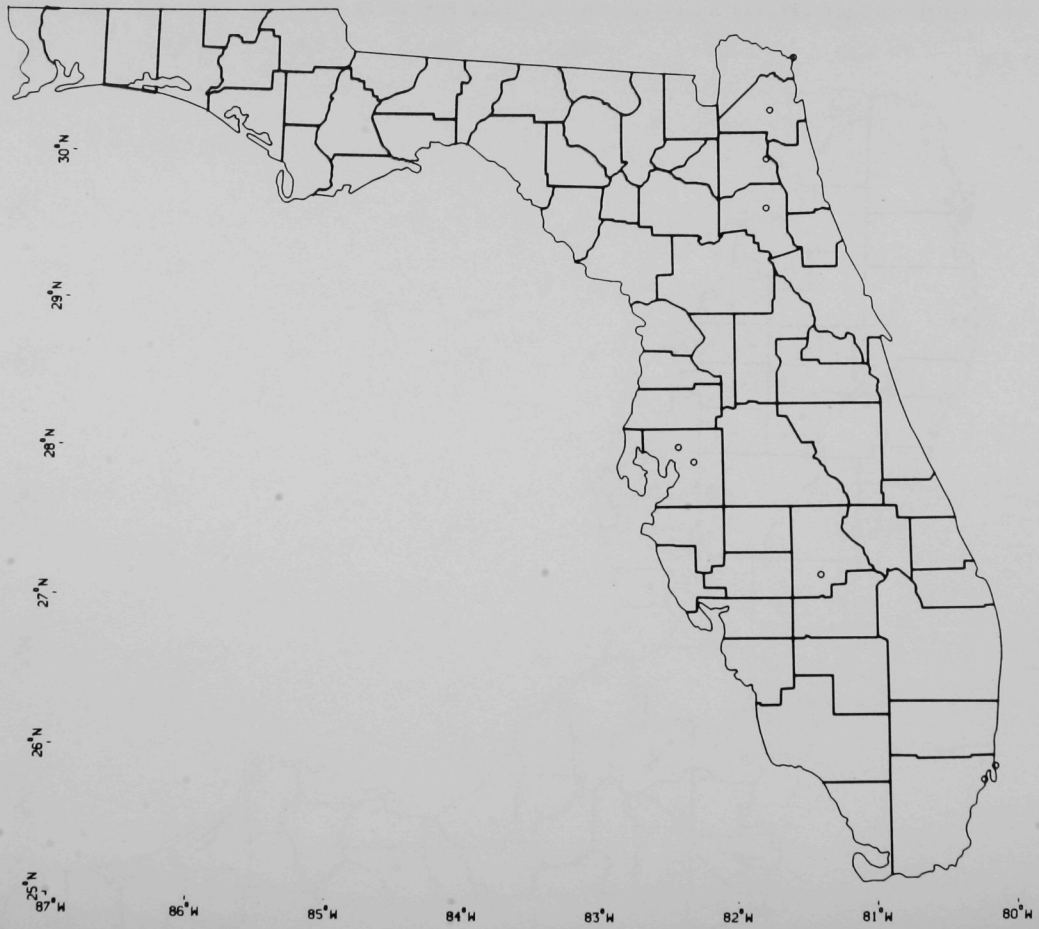


Fig. IV.23. Florida: Monitors Reporting Adequate Data on Annual Average TSP; No Violations

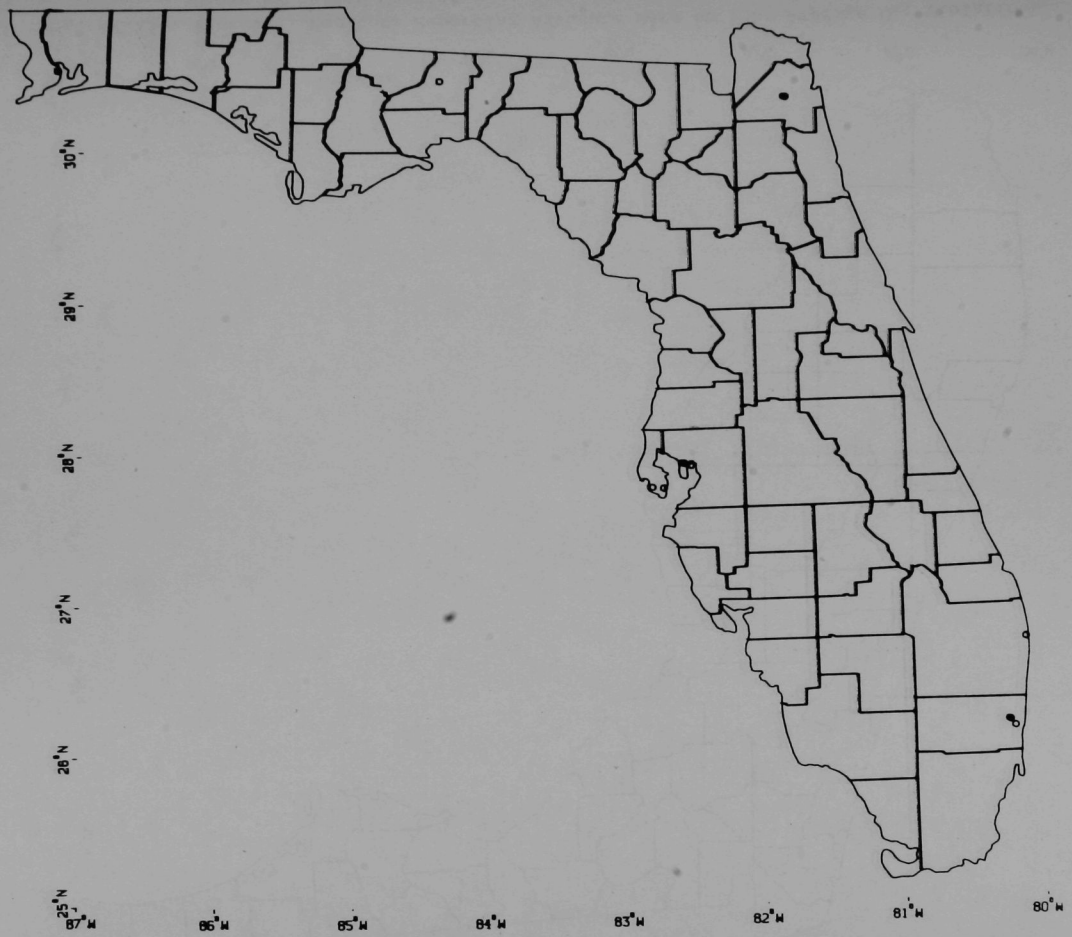


Fig. IV.24. Florida: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

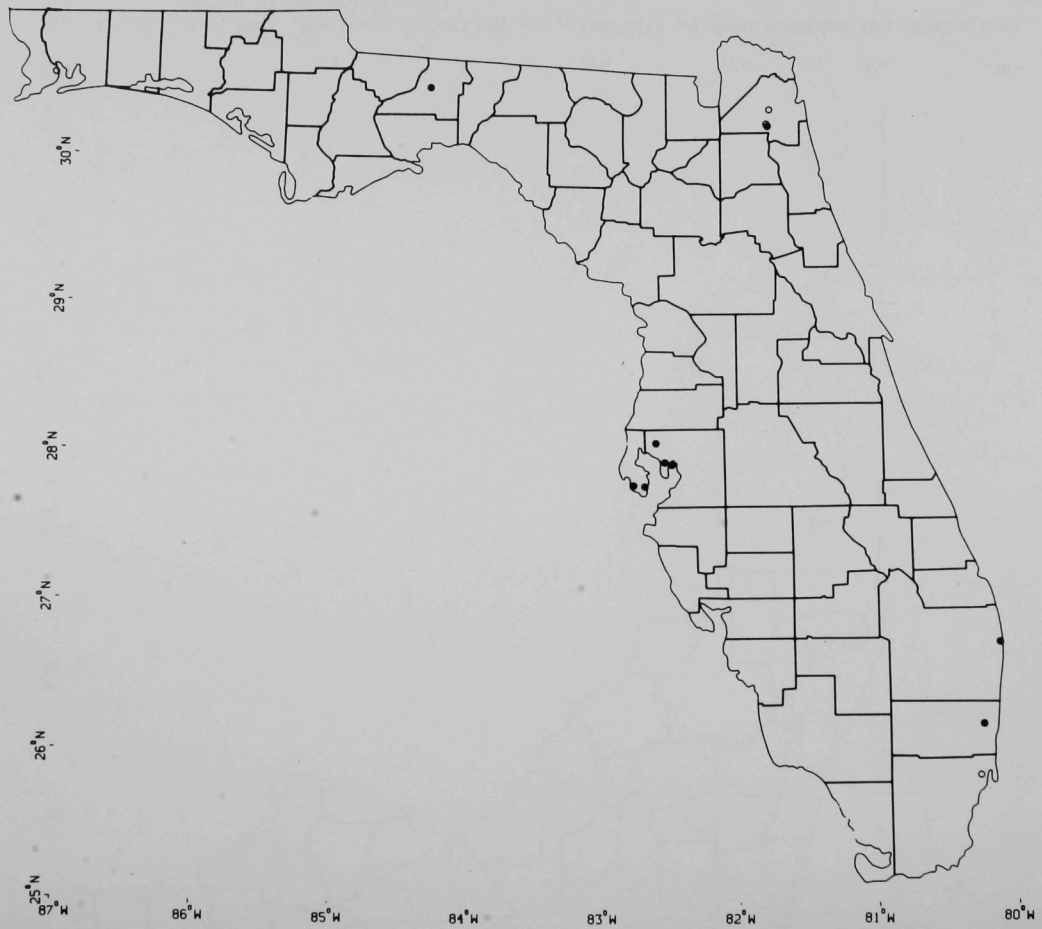


Fig. IV.25. Florida: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

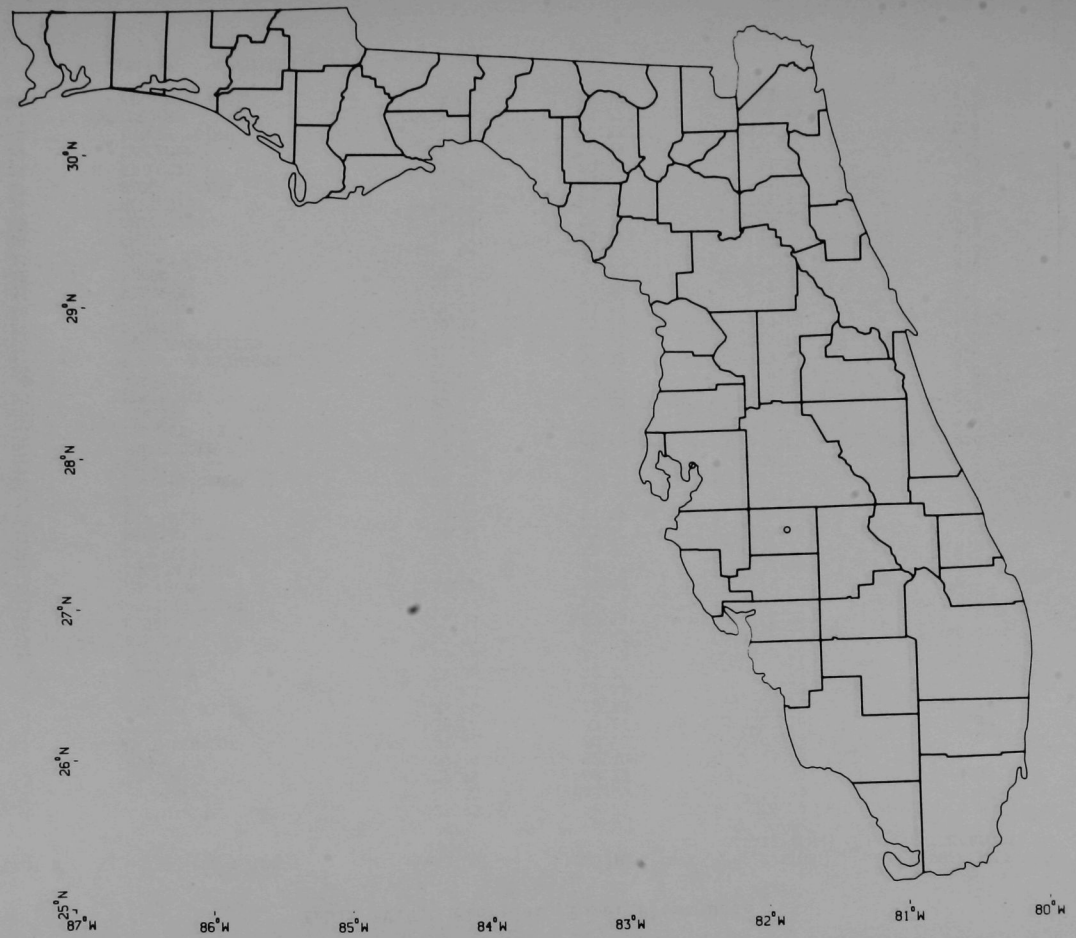


Fig. IV.26. Florida: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table IV.4. Florida: Power Plant Data

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ANCLOTE 1&2	27.95	82.73	556.20	0.0
2	AVON PARK	27.58	81.49	46.00	0.0
3	BARTOW	27.95	82.73	494.40	0.0
4	BIG BEND	27.79	82.40	891.00	0.0
5	CAPE KENNEDY	28.47	80.76	804.78	0.0
6	CRIST	30.56	87.21	1220.00	0.0
7	CRYSTAL RIVER	28.96	82.70	964.30	964.30
8	CUTLER	25.63	80.30	351.50	0.0
9	DEERHAVEN	29.76	82.39	81.00	0.0
10	FORT MYERS	26.70	81.78	558.80	0.0
11	GANNON	27.91	82.43	1278.38	0.0
12	HIGGINS	28.00	82.66	133.00	0.0
13	HOOKERS POINT	27.94	82.44	232.60	0.0
14	HOPKINS	30.45	84.40	75.00	0.0
15	INDIAN RIVER	28.49	80.78	638.80	0.0
16	JR KELLY	29.65	82.32	110.25	0.0
17	KENNEDY	30.37	81.62	249.60	0.0
18	KEY WEST	25.53	81.07	61.75	0.0
19	KIND &	27.37	80.43	68.00	0.0
20	LAKE HIGHLAND	28.56	81.38	103.75	0.0
21	LARSEN	28.05	81.92	120.00	0.0
22	LAUDERDALE	26.07	80.20	312.50	0.0
23	MANATEE 1&2	27.47	82.30	21.70	0.0
24	MARTIN	27.43	80.90	21.70	0.0
25	NORTHSIDE	30.42	81.55	595.00	0.0
26	PALATKA	29.63	81.59	109.60	0.0
27	PLANT #3/MCINTOSH	28.08	81.92	100.00	0.0
28	PORT EVERGLADES	26.09	80.13	1254.60	0.0
29	PURDOM	30.16	84.20	130.00	0.0
30	PUTNAM	29.60	81.74	19.55	0.0
31	RIVIERA	26.77	80.04	739.59	0.0
32	SANFORD	28.85	81.33	1029.05	0.0
33	SCHOLZ	30.67	84.89	98.00	0.0
34	SMITH	26.61	80.07	74.10	0.0
35	SMITH	30.27	85.70	380.00	0.0
36	SOUTHSIDE	30.32	81.65	356.60	0.0
37	STOCK ISLAND	25.53	81.07	37.00	0.0
38	N ST LUCIE	27.37	80.49	31.50	0.0
39	SUWANNEE	30.40	83.19	147.00	0.0
40	TURKEY POINT	25.43	80.33	2337.79	0.0
41	* TURNER	2337.79	81.27	189.10	0.0
42	VERO BEACH MUN	27.64	80.38	62.00	0.0

N NUCLEAR * NOT PLOTTED

Table IV.5. Florida: Fuel Use Data

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ANCLOTE 1&2	0.0	0.0	2.40	4462.70	0.0
2	AVON PARK	0.0	0.0	2.30	51.00	1485.20
3	BARTON	0.0	0.0	2.30	3368.40	5912.10
4	BIG BEND	3.15	1684.20	0.0	0.0	0.0
5	CAPE KENNEDY	0.0	0.0	0.88	4534.00	18542.00
6	CRIST	2.92	1279.30	2.80	68.06	11023.68
7	CRYSTAL RIVER	0.0	0.0	2.40	8033.70	0.0
8	CUTLER	0.0	0.0	0.93	216.30	5738.30
9	DEERHAVEN	0.0	0.0	2.13	601.26	1076.56
10	FORT MYERS	0.0	0.0	0.88	4331.00	0.0
11	GANNON	3.13	1901.70	0.93	705.40	0.0
12	HIGGINS	0.0	0.0	2.40	551.40	3724.20
13	HOOKERS POINT	0.0	0.0	0.91	1073.90	0.0
14	HOPKINS	0.0	0.0	1.84	528.57	1614.66
15	INDIAN RIVER	0.0	0.0	1.70	3895.04	1050.07
16	JR KELLY	0.0	0.0	2.19	328.98	103.15
17	KENNEDY	0.0	0.0	1.58	1939.22	0.0
18	KEY WEST	0.0	0.0	1.96	325.78	0.0
19	KINO 8	0.0	0.0	2.01	515.29	494.30
20	LAKE HIGHLAND	0.0	0.0	1.67	291.86	967.96
21	LARSEN	0.0	0.0	0.66	613.00	758.40
22	LAUDERDALE	0.0	0.0	0.89	1029.60	6763.30
23	MANATEE 1&2	0.0	0.0	0.0	0.0	0.0
24	MARTIN	0.0	0.0	0.0	0.0	0.0
25	NORTHSIDE	0.0	0.0	2.03	3570.56	0.0
26	PALATKA	0.0	0.0	0.99	135.70	4104.30
27	PLANT #3/MCINTOSH	0.0	0.0	2.43	817.90	870.80
28	PORT EVERGLADES	0.0	0.0	0.85	6518.00	25745.00
29	PURDOM	0.0	0.0	1.02	726.24	101.17
30	PUTNAM	0.0	0.0	0.0	0.0	0.0
31	RIVIERA	0.0	0.0	0.95	3139.00	16441.00
32	SANFORD	0.0	0.0	0.94	5176.00	4673.00
33	SCHOLZ	1.90	217.20	0.0	0.0	0.0
34	SMITH	1.91	681.50	0.0	0.0	2723.32
35	SMITH	0.0	0.0	1.80	42.97	0.0
36	SOUTHSIDE	0.0	0.0	1.59	2916.23	0.0
37	STOCK ISLAND	0.0	0.0	2.43	353.32	0.0
38	N ST LUCIE	0.0	0.0	0.0	0.0	0.0
39	SUWANNEE	0.0	0.0	2.50	1108.20	1941.70
40	TURKEY POINT	0.0	0.0	0.90	5177.00	12240.00
41	* TURNER	0.0	0.0	2.50	652.00	5682.60
42	VERO BEACH MUN	0.0	0.0	2.00	404.00	690.00

N NUCLEAR * NOT PLOTTED

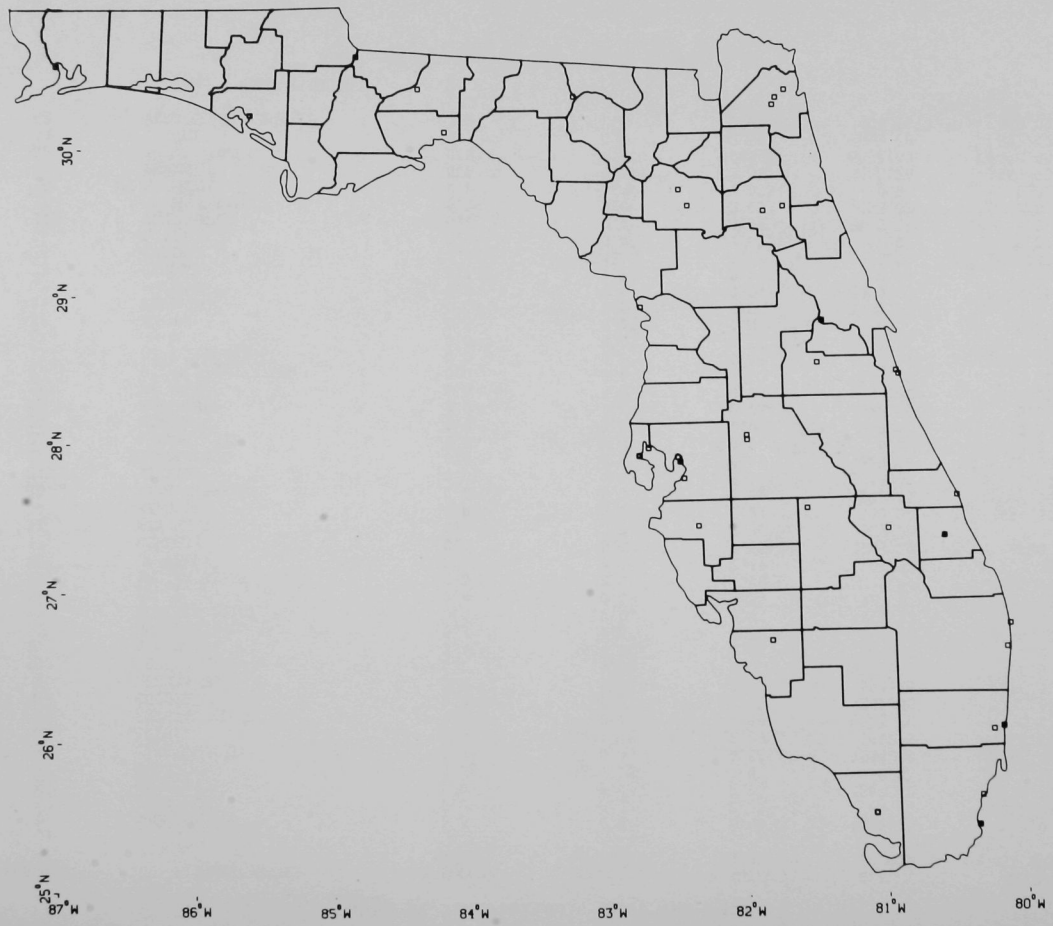


Fig. IV.27. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open, <1000 MW. Triangle = Nuclear)

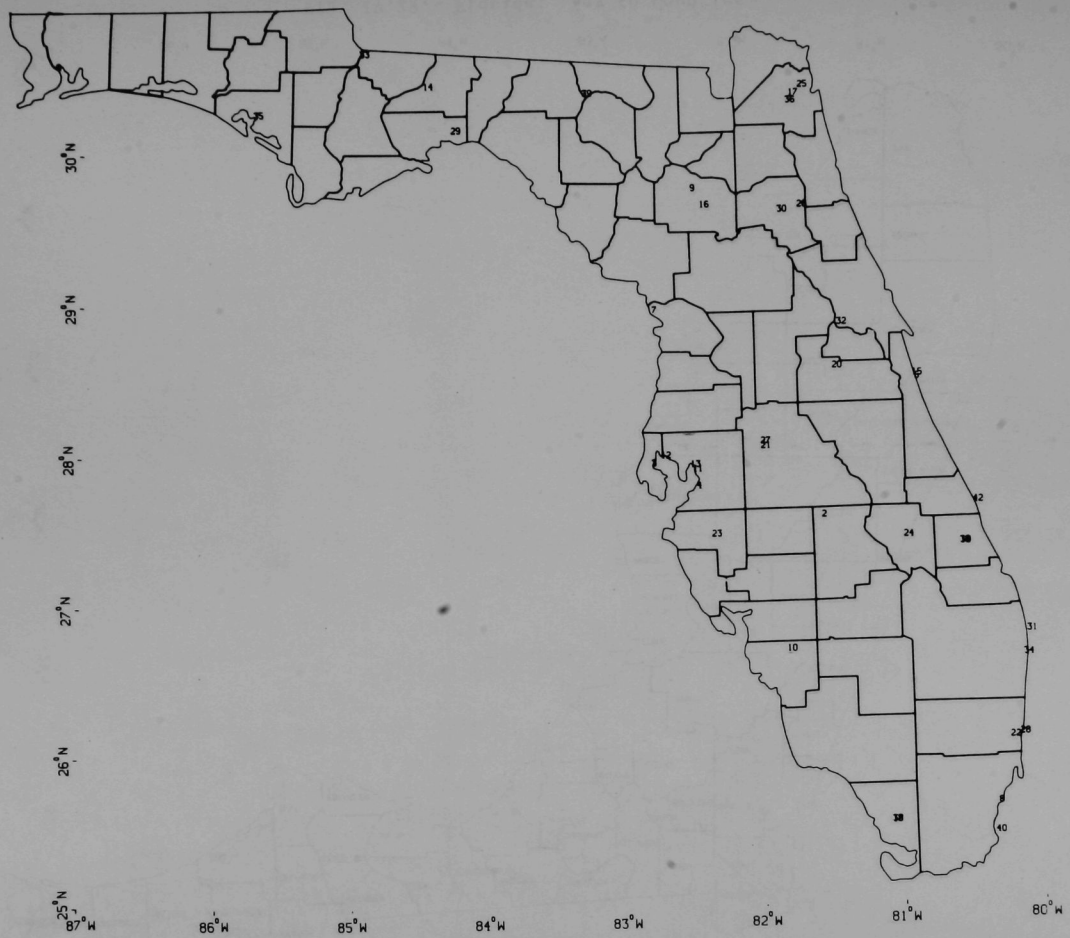


Fig. IV.28. Power Plant Key (See Tables IV.4 and IV.5 for Identifcation and Fuel Use Data)

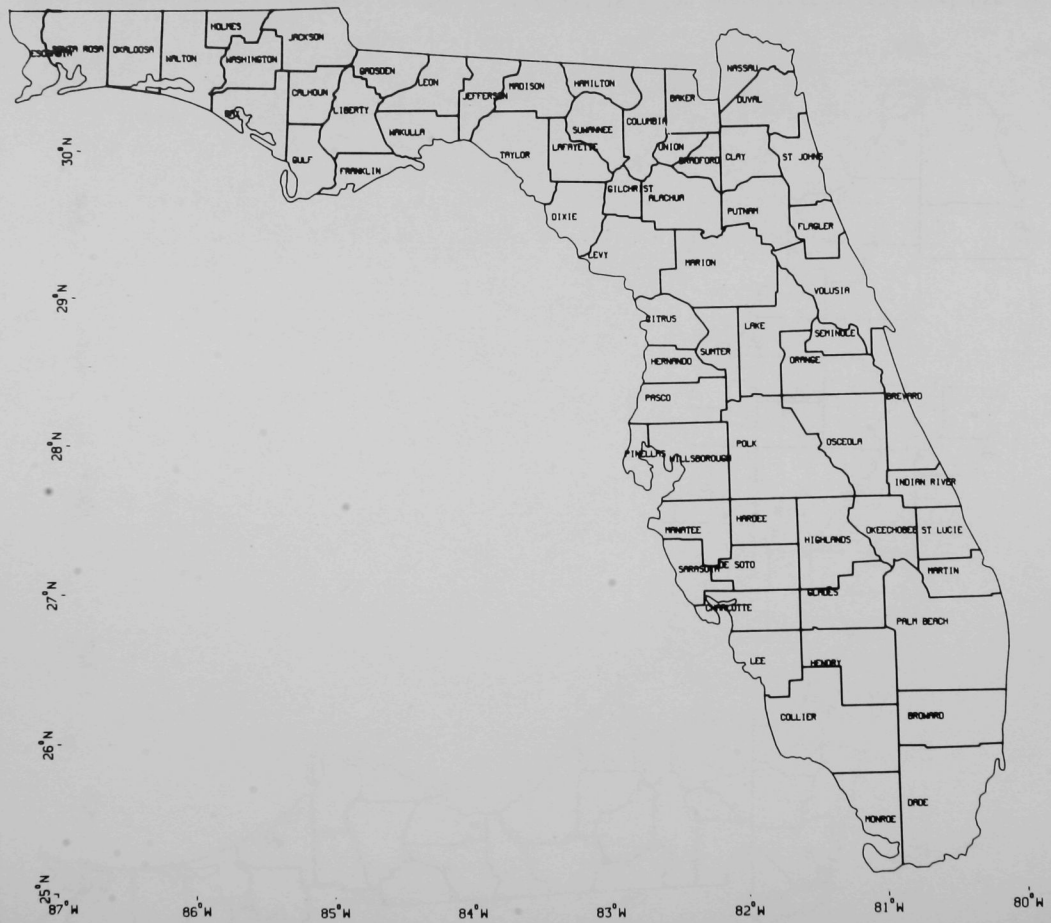


Fig. IV.29. Florida: Key to Counties

REGION IV: GEORGIA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	38	1
	1 yr			31	0
TSP	24 hr	3	1	59	0
	1 yr			52	1
NO_x	1 yr	0[b]	-	29	1
CO	8 hr	1	-	4	4
O_x	1 hr	2	-	1	1

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	13
Nuclear	1
Total	14

GEORGIA: Official SIP, 2/79

I. SOURCES OF THE PROBLEMS

Georgia has designated three areas as in nonattainment for the primary TSP standard: portions of Chatham Co. (Savannah), Fulton Co. (Atlanta) and Walker Co. (Rossville); and one area as in nonattainment for the secondary TSP standard in Washington Co. (Sandersville). In Savannah, the TSP emission inventory produced the following source estimates: pulp mill emissions, 45%; bulk Kaolin handling operations on ships, 26%; road dust and ocean atmosphere, the remainder. Atlanta's particulate pollution results from road dust (50%), fugitive emissions from a cement plant (Howard Pipe Co., making cement pipe) and from iron processing. In Walker County, the major sources of particulate emissions are a quarry operation (the Stone Man, Inc.) contributing 50%, an asphalt plant, about 15%; a large industrial park (25%); and mobile and miscellaneous sources, the remainder. The secondary violations in Sandersville are the result of emissions from a clay (Kaolin) processing plant (50-75% of the total particulate emissions).

The downtown area of Atlanta was designated as in nonattainment for CO, because of motor vehicle emissions (98% are assumed to be emitted from transportation sources). The Atlanta and Columbus (Georgia) and Phenix City (Alabama) areas were designated as in nonattainment for ozone.

II. ATTAINMENT STRATEGIES

A. TSP

1. Savannah

a. Industrial stationary sources

- RACT already required
- emissions from pulp mill result from malfunction of control equipment
- state will adopt regulation to control malfunction

b. Urban fugitive road dust

- study sources
- develop control procedures
- implement controls (by 1981)

c. Relocate several monitors and redraw nonattainment area

2. Atlanta

a. RACT already required

b. Study fugitive road dust

c. Implement necessary control measures

3. Rossville

a. Fugitive emissions from quarry sites

- control emissions from quarrying
- control emissions from stockpiles and unpaved roads
- add state regulation on malfunction of existing control equipment

b. The state suggests that some of the problem may result from combustion sources in Chattanooga, Tennessee

- industrial park is just north of Georgia/Tennessee border

4. Sandersville

a. Major sources now in compliance with existing emission limitations

b. Redesignation as attainment requested

B. CO (ATLANTA)

1. 47% reduction necessary to meet standards
2. FMVECP program
3. Extension to 1987 requested
4. Vehicle inspection and maintenance program

a. Legislation passed

b. Submittals to the EPA by July 1, 1979, for remainder

C. OZONE

1. FMVECP reduction in auto emissions
2. VOC regulations for all sources with potential emissions of 100 tons per year or greater:

a. Surface coating

b. Metal furniture coating

c. Large appliance surface coating

d. Wire coating

e. Petroleum liquid storage

f. Bulk gasoline terminals

g. Cutback asphalt

h. Petroleum refinery

i. Solvent metal cleaning

j. Further RACT categories as they are developed by EPA

III. NEW SOURCE REVIEW

The state believes that its existing permit system for new sources will enable growth to be achieved without interfering with reasonable further progress towards attainment. Reducing current emission levels will provide a growth allowance for new sources that will not require an emission offset regulation. No quantification or amplification of the amount of a growth allowance or the method of allocation is provided by the state.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing sources

a. Limits on sulfur in fuel:

- with fuel input < 100 MM Btu per hr: maximum 2.5% sulfur (by weight)
- with fuel input > 100 MM Btu per hr: maximum 3.0% sulfur

b. An SO_2 emission limitation, calculated on a stack height formula

2. New sources (after 1/72)

a. For fuel input $\leq$ 250 MM Btu per hr:

- limitations are the same as A.1, above

b. For fuel input > 250 MM Btu per hr:

- NSPS

B. TSP

1. Existing sources (built before 1/72)

   a. Fuel input < 10 MM Btu per hr: 0.7 lb particulate matter per MM Btu

   b. Fuel input > 2000 MM Btu per hr: 0.24 lb particulate matter per MM Btu

   c. Limits interpolated within this range for sources of intermediate size

2. New sources (built after 1/72)

   a. Fuel input < 10 MM Btu per hr: 0.5 lb particulate matter per MM Btu

   b. Fuel input > 250 MM Btu per hr: 0.10 lb particulate matter per MM Btu

   c. Limits interpolated within this range for sources of intermediate size

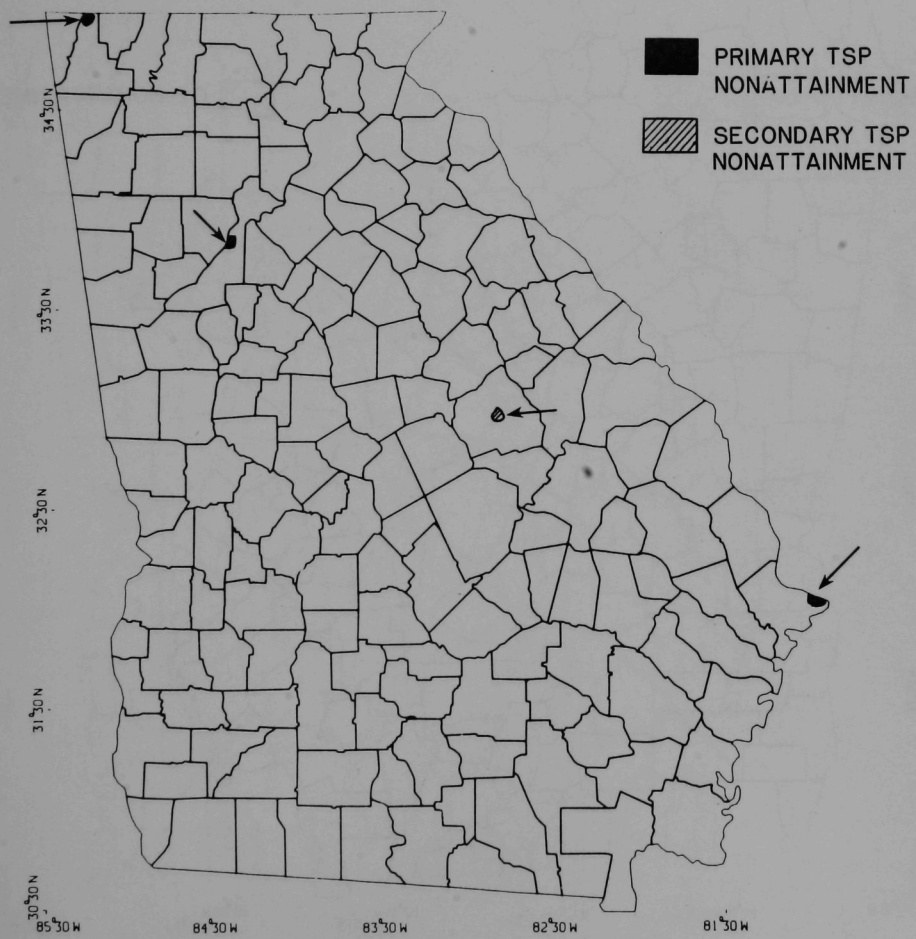


Fig. IV.30. Georgia: TSP Nonattainment Areas as Designated May 1979

Fig. IV.31. Georgia: CO Nonattainment Areas as Designated May 1979

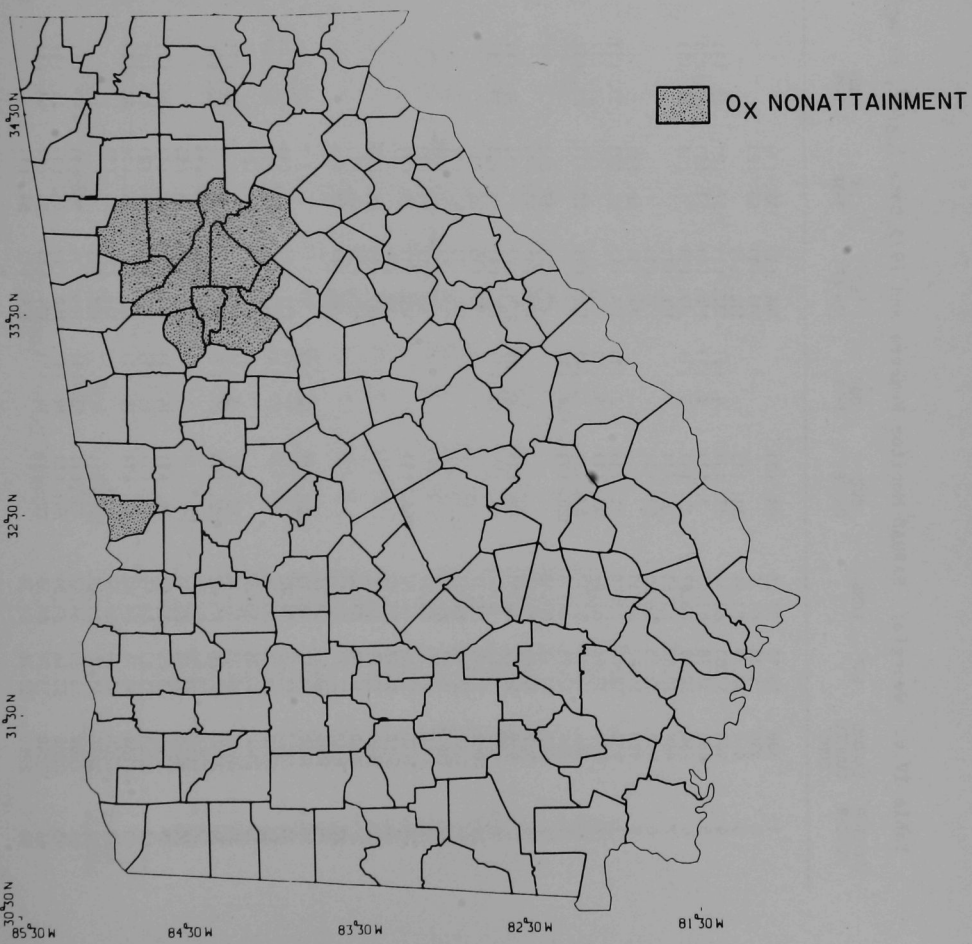


Fig. IV.32. Georgia: O_X Nonattainment Areas as Designated May 1979

Table IV.6. Georgia: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$, or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	300	33.17	83.25	108. (1)		104. (1)	32. (1)			
2	380	34.18	84.79			111. (1)	63. (2)			
3	460	32.79	83.64	38. (1)		112. (1)				
4	460	32.81	83.64	13. (1)	4. (1)	133. (1)	57. (2)	38. (1)		
5	460	32.78	83.65	3. (1)	3. (1)	115. (1)	51. (1)	31. (1)		
6	460	32.89	83.67	11. (1)	3. (1)	79. (1)	31. (1)	32. (1)		
7	460	32.83	83.63	6. (1)		106. (1)				
8	460	32.75	83.62	49. (1)		113. (1)				
9	900	34.92	85.11			86. (1)	40. (1)			
11	980	32.08	81.10	11. (1)	3. (1)	114. (1)	58. (2)	31. (1)		
12	980	32.08	81.04	38. (1)	5. (1)			20. (1)		
13	980	32.05	81.12	31. (1)	5. (1)	157. (1)	50. (1)	21. (1)		
14	980	32.08	81.11	120. (1)	30. (1)					
15	980	31.97	81.13			87. (1)	37. (1)			
16	980	32.04	81.10			120. (1)	43. (1)			
17	980	32.08	81.11	42. (1)	6. (1)	235. (2)	81. (3)	37. (1)		
18 *	980	0.0	0.0	44. (1)	13. (1)	105. (1)	59. (2)	37. (1)		
20	1060	33.95	83.37			76. (1)	36. (1)			
21	1160	33.95	84.53			108. (1)	45. (1)			
22	1160	33.88	84.52			97. (1)	46. (1)			
23	1240	31.17	83.77			98. (1)	44. (1)			
24	1420	33.39	84.82	166. (1)		120. (1)	39. (1)			
25	1460	31.97	83.72			85. (1)				
26	1640	33.79	84.28			107. (1)	31. (1)			
27	1640	33.90	84.28			136. (1)	48. (1)			
28	1640	33.71	84.11			93. (1)	38. (1)			
29	1640	33.69	84.27							324. (4)
30 *	1760	31.47	78.13	88. (1)	16. (1)					
31	1800	33.75	84.75			113. (1)	43. (1)			
32	2140	34.26	85.18			97. (1)	54. (1)			
33	2140	34.26	85.32			143. (1)	66. (2)			
35	2140	34.26	85.18	12. (1)	3. (1)			32. (1)		
36	2140	34.26	85.32	492. (4)	24. (1)			23. (1)		
37	2260	33.56	84.58			71. (1)	33. (1)			
38	2260	30.68	84.44			95. (1)	43. (1)			
39	2260	33.66	84.42	30. (1)	14. (1)	143. (1)	52. (1)	49. (1)		
40	2260	33.82	84.45	13. (1)	13. (1)	154. (1)	59. (2)	45. (1)		
41	2260	33.76	84.42	33. (1)	14. (1)	100. (1)	46. (1)	48. (1)		
42	2260	33.74	84.37			115. (1)	55. (1)			
43	2260	33.80	84.44	104. (1)		128. (1)				
44	2260	33.80	84.47	13. (1)	13. (1)	101. (1)	55. (1)	47. (1)		
45	2260	33.76	84.54	31. (1)	14. (1)	100. (1)	46. (1)	36. (1)		
46	2260	33.77	84.39	28. (1)	14. (1)	129. (1)	54. (1)	43. (1)		
48	2260	33.76	84.38			124. (1)	54. (1)		13. (4)	

Table IV.6. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
49	2260	33.76	84.38					147. (4)		
51 *	2260	33.79	80.41	111. (1)		139. (1)	66. (2)		10. (3)	
52	2260	33.81	84.38			72. (1)	39. (1)			
53	2260	33.69	84.37	51. (1)	13. (1)	86. (1)	45. (1)	32. (1)		
54	2260	33.79	84.39						22. (4)	
55	2260	33.74	84.39						17. (4)	
56 *	2260	0.0	0.0	72. (1)	17. (1)	94. (1)	47. (1)	63. (1)		
57	2260	33.76	84.38	182. (1)	38. (1)			64. (1)		
58	2380	31.22	81.52	17. (1)	3. (1)	69. (1)	35. (1)	29. (1)		
59	2380	31.18	81.50			108. (1)	47. (1)			
60	2380	31.15	81.49	9. (1)	3. (1)	93. (1)	44. (1)	16. (1)		
61	2540	34.29	83.80			143. (1)				
62	2540	34.30	83.82	3. (1)	3. (1)	142. (1)	42. (1)	17. (1)		
63	2760	33.45	84.14			76. (1)	33. (1)			
64	2960	33.21	82.38			89. (1)	46. (1)			
65	3300	30.86	83.28	3. (1)	3. (1)	75. (1)	40. (1)	25. (1)		
67	3860	32.46	84.94	3. (1)	3. (1)	115. (1)	52. (1)	30. (1)		
68	3860	32.06	84.11	15. (1)	5. (1)	61. (1)	42. (1)	39. (1)		
69	3860	32.48	84.98			109. (1)	46. (1)			
71	4320	33.46	81.94	10. (1)	3. (1)	108. (1)	46. (1)	31. (1)		
72	4320	33.39	82.01	59. (1)	20. (1)					
73 *	4700	32.07	78.24			108. (1)	45. (1)			
74	5060	32.20	82.32	3. (1)	3. (1)	69. (1)	22. (1)	13. (1)		
75	5280	34.97	85.30	22. (1)	4. (1)	206. (2)	71. (2)	28. (1)		
77	5440	31.60	81.89			95. (1)				
78	5560	34.79	84.99			85. (1)	31. (1)			

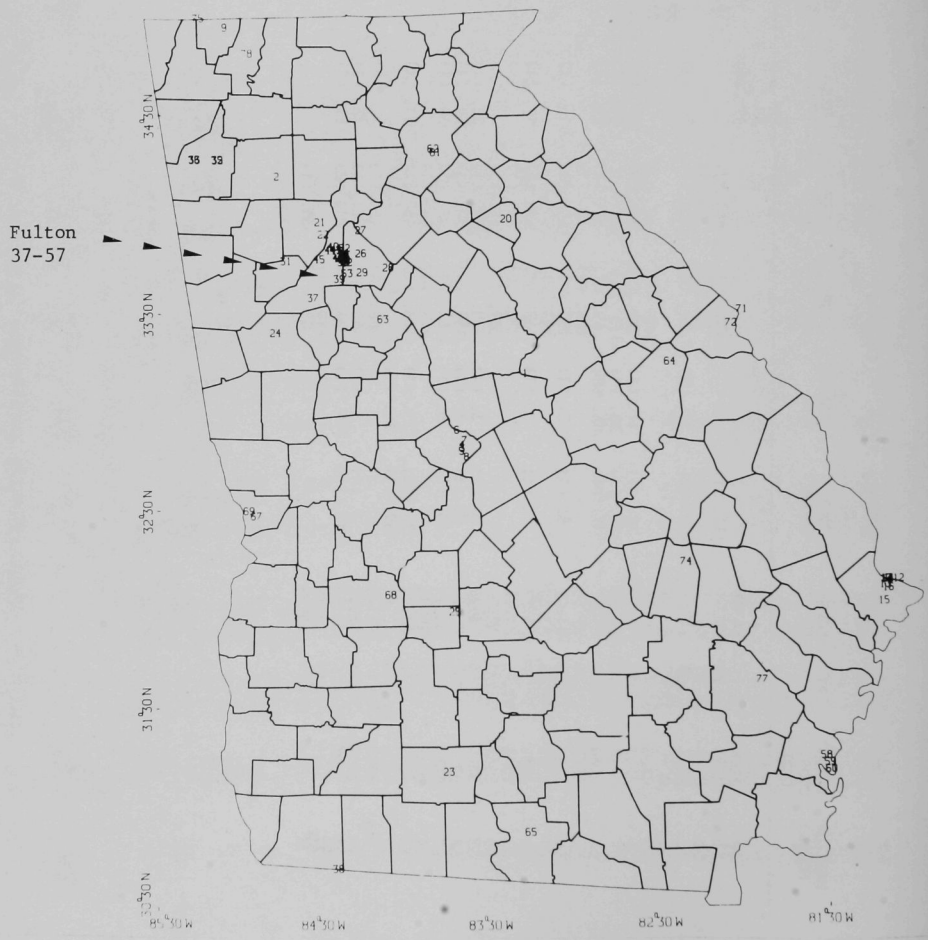


Fig. IV.33. Georgia: Locations of SAROAD Monitors (See Table IV.6 for Monitor Numbers)

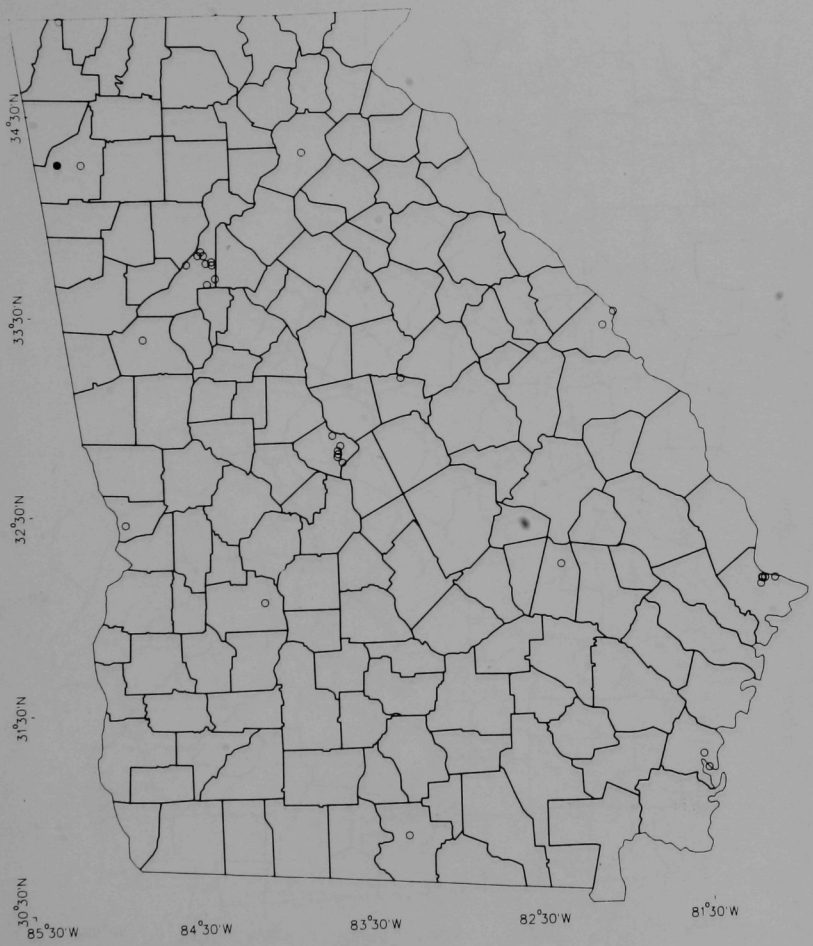


Fig. IV.34. Georgia: Monitors Reporting Adequate Data on 24-hr Average SO_2; Violations Shown by Shaded Circles

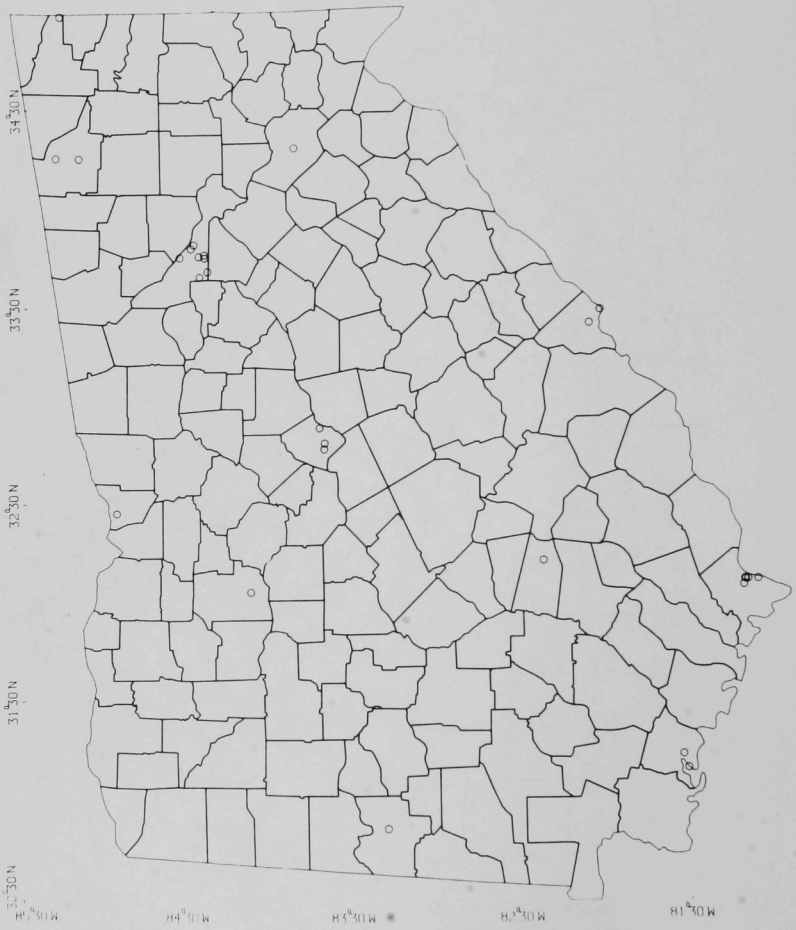


Fig. IV.35. Georgia: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

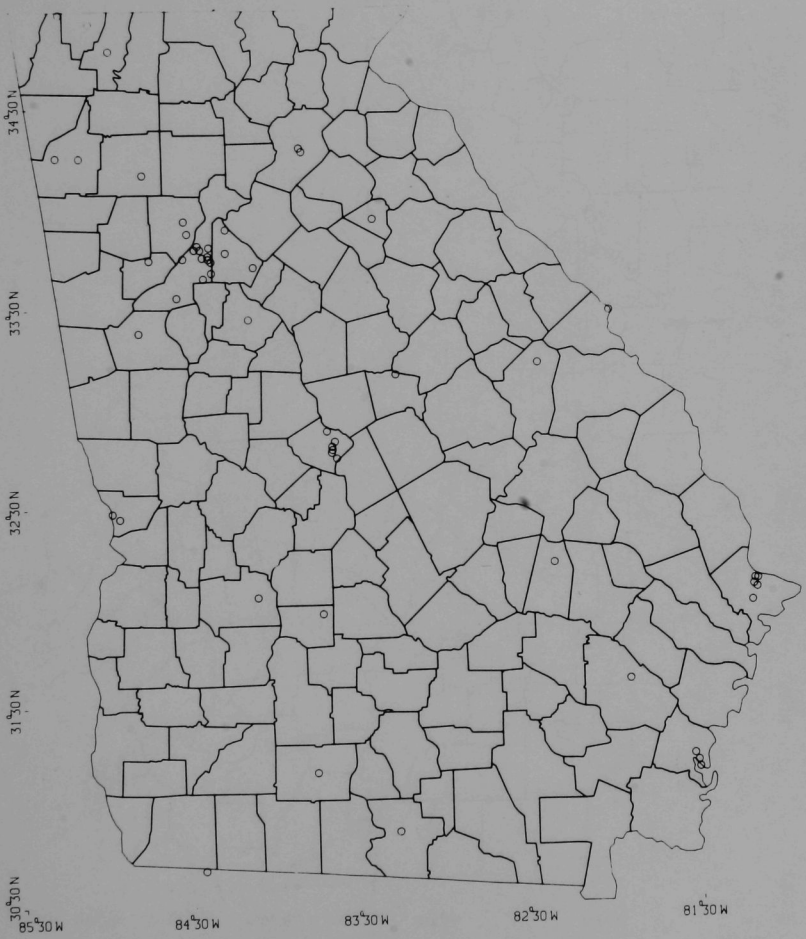


Fig. IV.36. Georgia: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

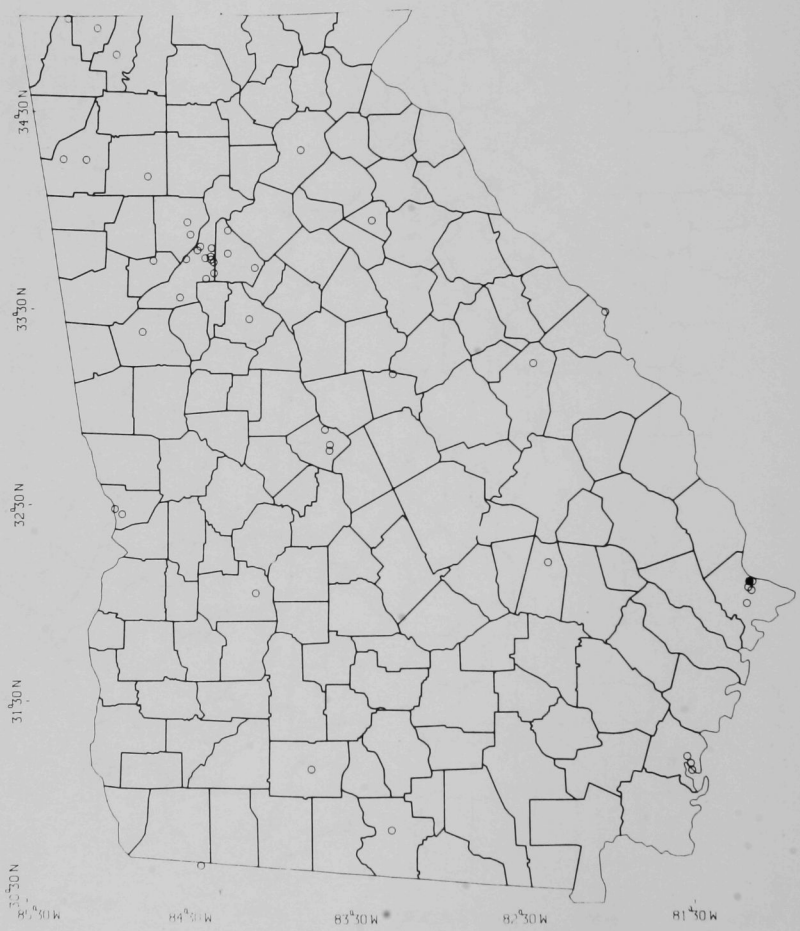


Fig. IV.37. Georgia: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

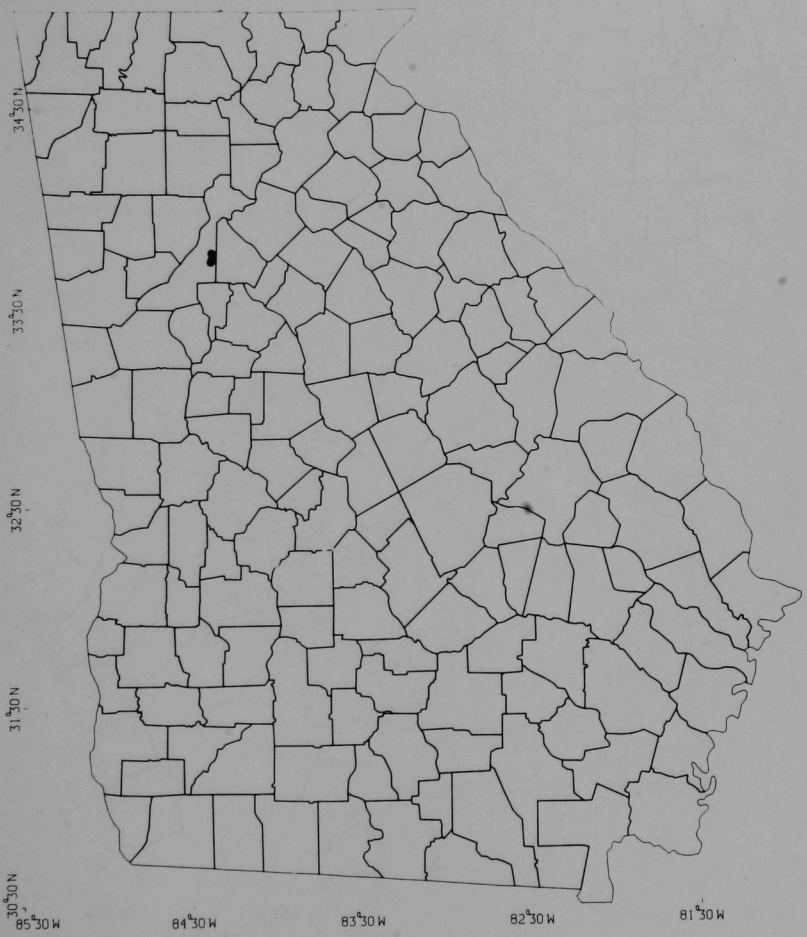


Fig. IV.38. Georgia: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

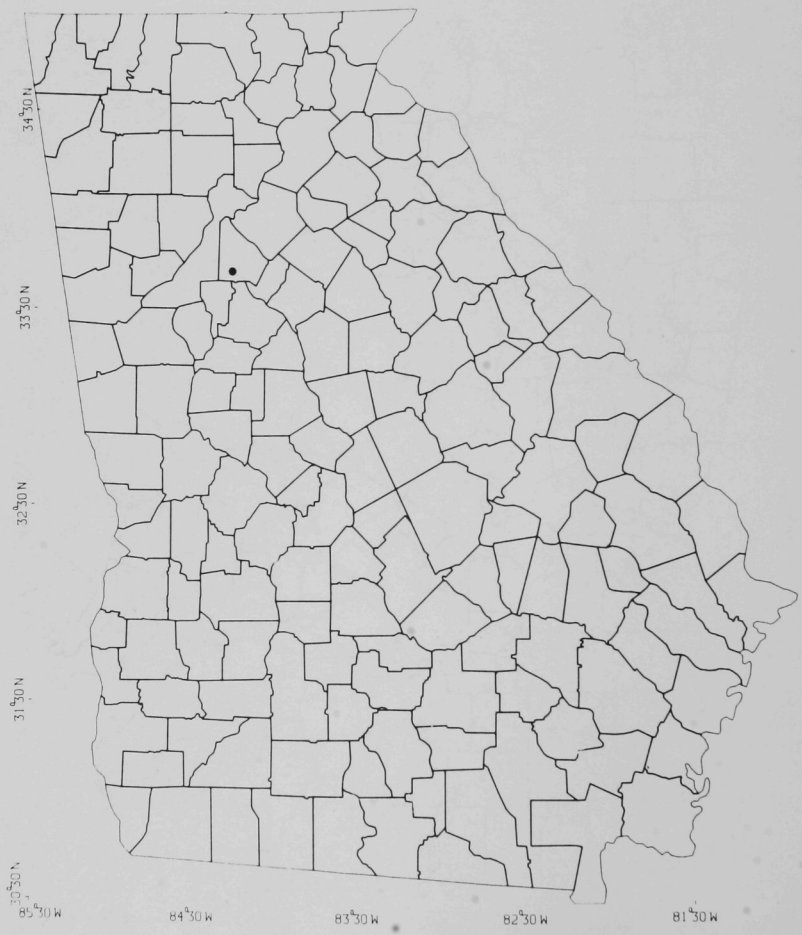


Fig. IV.39. Georgia: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

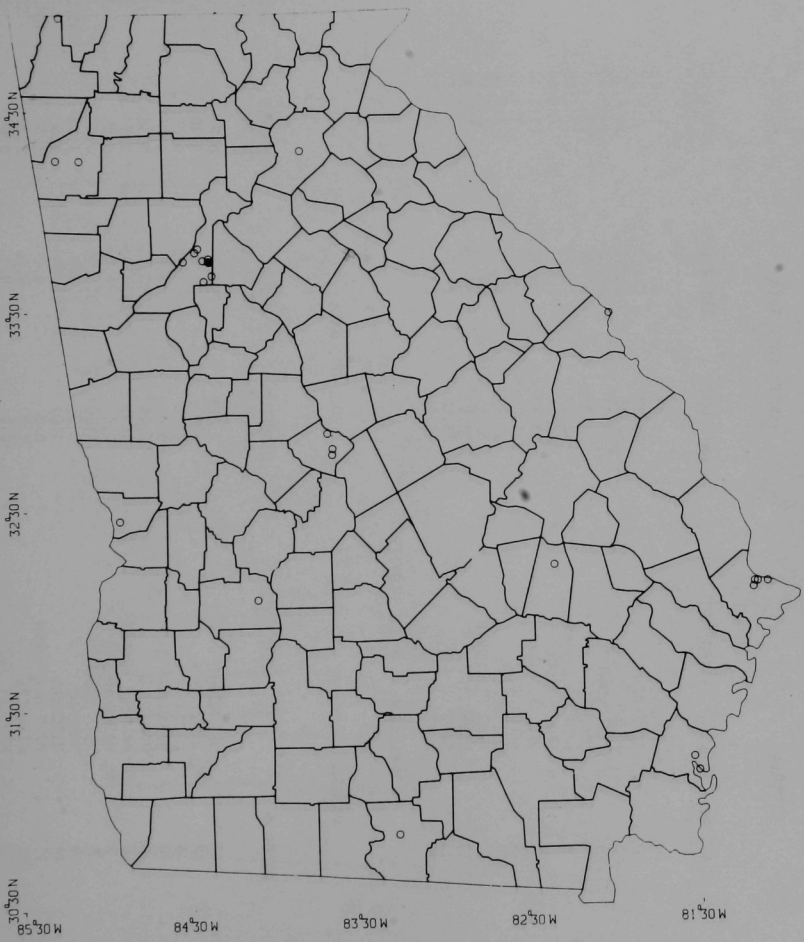


Fig. IV.40. Georgia: Monitors Reporting Adequate Data on Annual Average NO_x; Violations shown by Shaded Circles

Table IV.7. Georgia: Power Plant and Fuel Use Data

GEORGIA — POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ARKWRIGHT	32.93	83.70	181.00	0.0
2	ATKINSON	33.82	84.47	256.00	0.0
3	BOWEN	34.13	84.92	3499.00	0.0
4	EFFINGHAM 1	32.37	81.34	5.50	0.0
5	HAMMOND	34.25	85.35	953.00	0.0
6	HARLLEE BRANCH	33.19	83.30	1746.00	0.0
7	N HATCH (NUCL)	31.74	82.31	25.00	0.0
8	JACK MCDONOUGH	33.82	84.47	598.00	0.0
9	MCMANUS	31.21	81.55	144.00	115.00
10	MITCHELL	31.45	84.13	218.00	0.0
11	PORT WENTWORTH	32.15	81.15	333.90	207.90
12	RIVERSIDE	32.09	81.08	102.30	0.0
13	WANSLEY 1&2	33.58	85.09	3.00	0.0
14	YATES	33.46	84.91	1487.00	0.0

N NUCLEAR * NOT PLOTTED

GEORGIA — FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ARKWRIGHT	1.72	253.74	0.0	0.0	6885.87
2	ATKINSON	0.0	0.0	0.10	731.19	15512.11
3	BOWEN	2.23	4258.90	0.0	0.0	0.0
4	EFFINGHAM 1	0.0	0.0	0.0	0.0	0.0
5	HAMMOND	2.46	1593.54	0.10	10.23	0.0
6	HARLLEE BRANCH	1.15	2358.03	0.0	0.0	0.0
7	N HATCH (NUCL)	0.0	0.0	0.0	0.0	0.0
8	JACK MCDONOUGH	1.60	801.75	0.0	6.79	4483.85
9	MCMANUS	0.0	0.0	1.93	1022.50	0.0
10	MITCHELL	1.21	409.81	0.0	0.0	0.0
11	PORT WENTWORTH	0.0	0.0	2.30	1888.90	6199.30
12	RIVERSIDE	0.0	0.0	2.30	80.60	3583.20
13	WANSLEY 1&2	0.0	0.0	0.0	0.0	0.0
14	YATES	1.85	2793.19	0.0	0.0	2024.81

N NUCLEAR * NOT PLOTTED

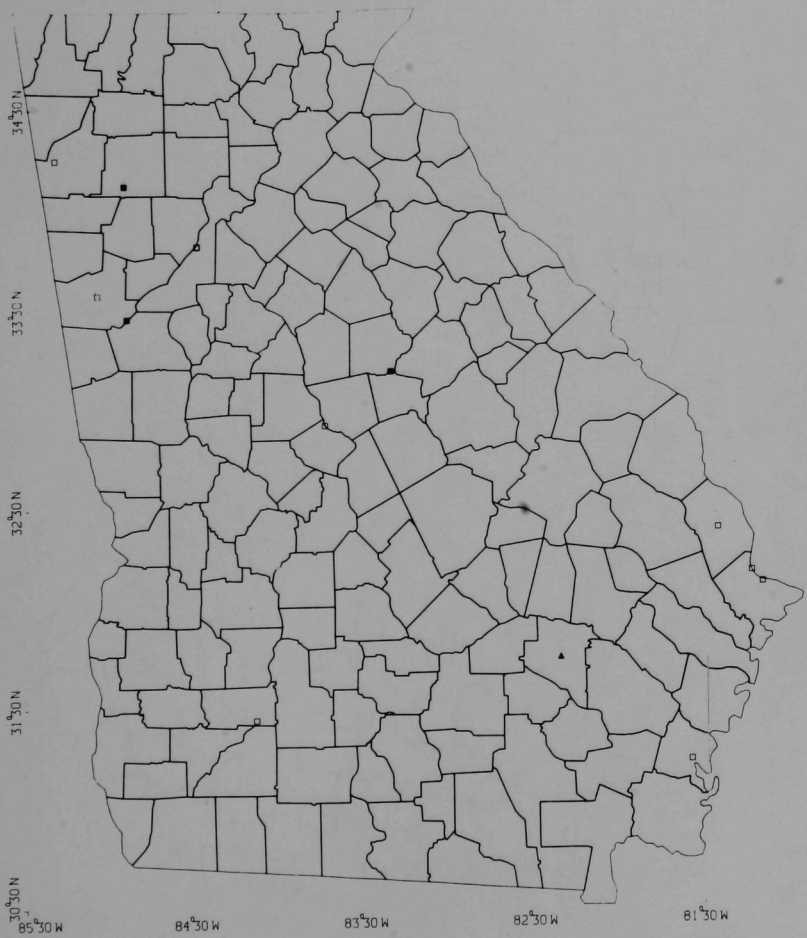


Fig. IV.41. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000 MW; Open, <1000 MW. Triangle = Nuclear)

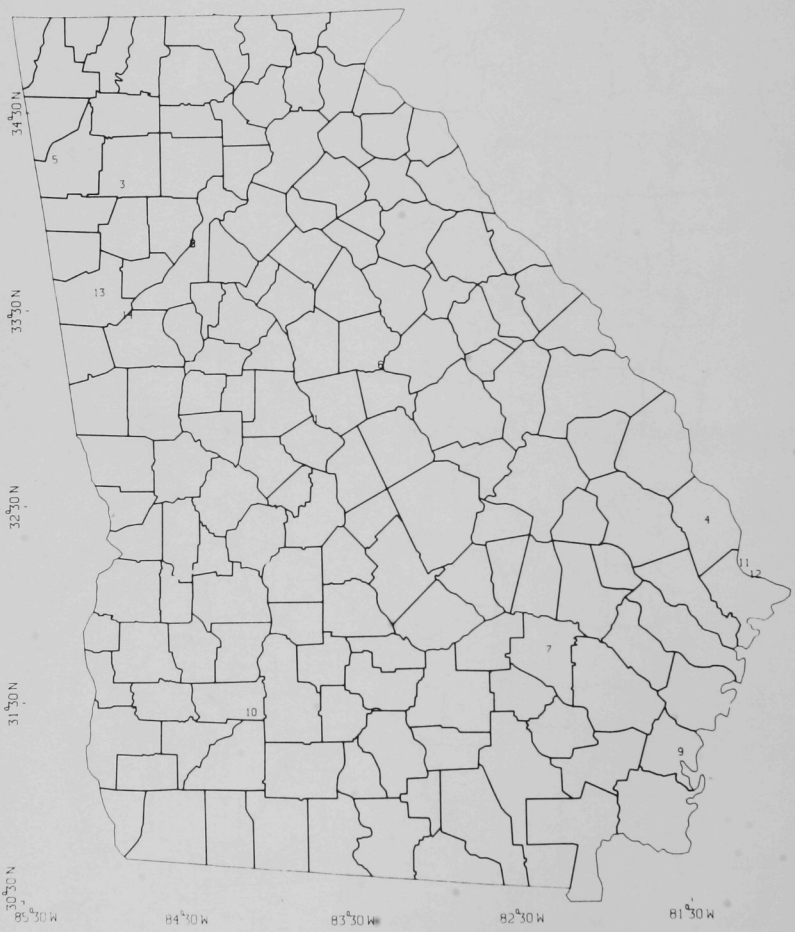


Fig. IV.42. Power Plant Key (See Table IV.7 for Identification and Fuel Use Data)

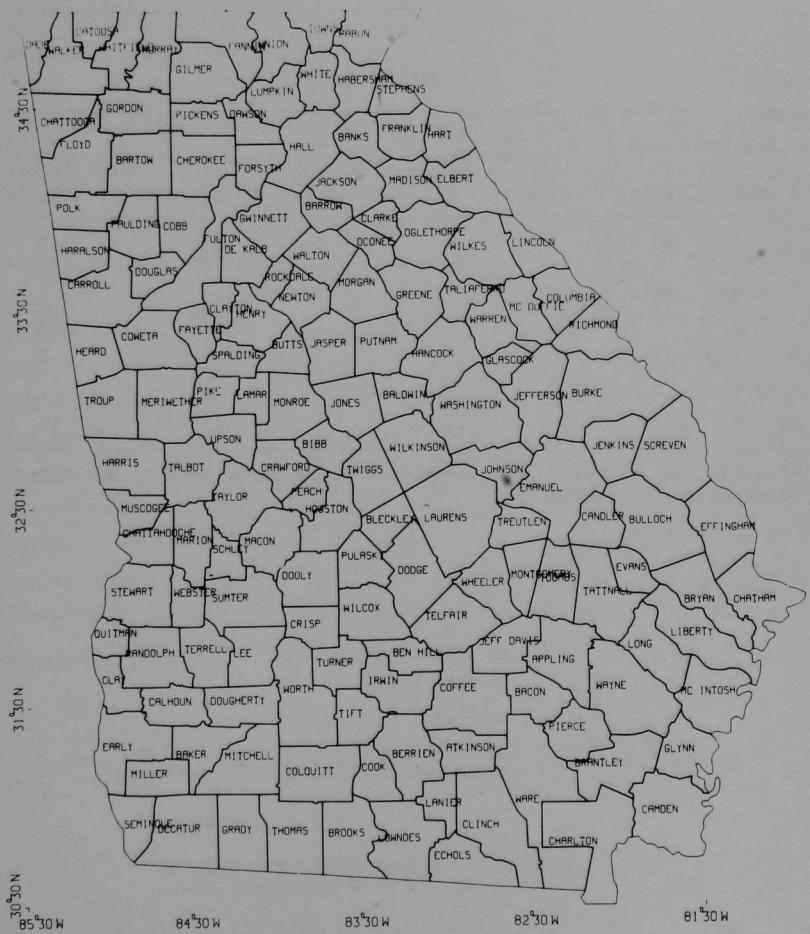


Fig. IV.43. Georgia: Key to Counties

REGION IV: KENTUCKY

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	7	0	134	6
	1 yr			116	0
TSP	24 hr	13	1	133	2
	1 yr			103	13
NO_x	1 yr	0[b]	-	98	0
CO	8 hr	1	-	17	11
O_x	1 hr	6	-	11	10

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	21
Nuclear	0
Total	21

KENTUCKY: Official SIP, 6/79

I. SOURCES OF THE PROBLEM

Kentucky designated six entire counties (Boyd, Greenup, Jefferson, McCracken, Muhlenberg, and Webster) and parts of two others (those portions of Daviess Co. in Owensboro and those portions of Henderson Co. in Henderson) as in nonattainment for SO_2. In six of the eight SO_2 nonattainment areas, violations are due to emissions from coal-fired power plants that are not in compliance with emissions regulations. Emissions from an oil refinery and a sulfuric acid plant create the other violations. There are 15 areas designated as in nonattainment for TSP; only one of these is violating the secondary standard. In four counties, external fuel combustion is a significant contributor to the ambient particulate load: McCracken, 90%; Lawrence, 60%; Jefferson, 55%; and Muhlenberg, 41%. In six other counties (Bullett, Campbell, Henderson, Madison, Perry, and Whitley) paved and unpaved roads contributed more than 50% of the total particulate emissions in 1975. Fugitive particulate emissions from industrial processes are also judged to contribute significantly to the ambient particulate levels, although (the SIP notes) they are "difficult to quantify." Mobile sources account for virtually all the carbon monoxide in the one CO nonattainment area, Jefferson County (Louisville). Mobile sources contribute 16%, 46%, 58%, 58%, and 69% of the hydrocarbon precursors to ozone in Boyd County, Jefferson County, Henderson County, the Northern Kentucky study area, and Fayette County, respectively. Stationary sources emit 79%, 44%, 28%, 31%, and 16% of hydrocarbon precursors in those counties while area sources account for the remaining 5 to 15%.

II. ATTAINMENT STRATEGIES

A. SO_2

1. Compliance with existing emission limitations for specific power plants currently out of compliance

   a. Henderson City:

      - Henderson Municipal Power is to emit no more than 6 lb of SO_2 per MM Btu

b. Jefferson County:

- Louisville Gas and Electric Company's Paddy's Run, Cane Run, and Mill Creek Plants are all exceeding the limit of 1.2 lb SO_2 per MM Btu
- Indiana's Gallagher plant also contributes to violations

c. McCracken County:

- TVA's Shawnee plant responsible for violation
- standard to be 1.2 lb SO_2 per MM Btu
- plant currently emitting 280 tons per year of SO_2 compared to allowable level of 60 tons per year

d. Owensboro:

- Owensboro Municipal Utilities cause violation
- Emission limit of 6.0 lb SO_2 per MM Btu to be met

e. Webster Co.

- Reid Station of the Big Rivers Rural Electric Coop is responsible for the violation
- Emission limit of 5.2 lb SO_2 per MM Btu to be met

2. More stringent emission limitations for existing power plants in Muhlenberg Co.

a. TVA's Paradise Plant:

- 2,558 MW capacity
- currently no SO_2 control
- emissions to be reduced from 5.2 to 3.1 lb SO_2 per MM Btu
- plant to add a limestone scrubber (80% effective) and coal washing operation

b. Kentucky Utilities' Green River Plant:

- 265 MW capacity
- currently using an 80% effective scrubber on three boilers (sharing a common stack) that produce 75 MW
- emission limit for entire plant reduced from 5.2 to 3.5 lb SO_2 per MM Btu
- plant to use low sulfur coal in two boilers producing 185 MW

- plant situated in coal mining area that produces high-sulfur coal; will need to ship low-sulfur coal from eastern Kentucky or Indiana

3. Boyd County

   a. Additional control on Ashland Oil's sulfur-recovery unit at its refinery

   b. Reduction in allowable emission rate for Cattlesburg Refinery from 2.2 lb SO_2 to 0.4 lb, by means of fuel blending of distillate and residual oil

   c. Desulfurization of coke oven gas at Allied Chemical plant

   d. Shutdown of another Allied Chemical plant

   e. Controls on process gas stream Calgon activated-carbon plant

4. Greenup County

   a. Violations due to out-of-compliance DuPont sulfuric acid plant

   b. Plant now in compliance, redesignation to attainment has been requested

B. TSP

1. Existing emission limitations on point sources constitute RACT

   a. Compliance by Airco Alloys facility will bring Marshall County into attainment

   b. Additional controls on point sources not cost effective

2. Controls on fugitive process dust and nontraditional sources to be developed and implemented in:

   a. Muhlenberg, McCracken, Boyd, and Jefferson Counties

   b. The cities of Corbin, Hazard, Louisa, Newport, Richmond, Pikeville, Owensboro, Henderson, and Shepherdsville

   c. Focus will be on reducing road dust and re-suspended coal dust

   d. Some fugitive industrial emissions will have RACT imposed on them

   e. Construction emissions to be limited in Jefferson County

C. CARBON MONOXIDE (JEFFERSON COUNTY)

1. Federal Motor Vehicle Emissions Control Program
2. Inspection and maintenance of vehicles
3. Reasonably available control measures (RACM) for transportation (see ozone RACM)

D. OZONE

1. FMVECP
2. Inspection and maintenance of vehicles
3. RACT on stationary sources:

   a. Asphalt paving
   b. Solvent metal cleaning
   c. Surface coating operations
   d. Petroleum liquid storage, loading terminals
   e. Petroleum refining

4. Additional strategies for Jefferson County (Louisville) and the Northern Kentucky Study Area (Cincinnati region)

   a. Jefferson County Transportation RACM

      - metro carpool (implemented)
      - improvement of mass transit
      - traffic flow improvements (adopted)
      - recommendations from Center City transportation study
      - 5-year transit authority improvement program
      - long range bicycle plan (additional strategies to be studied)

   b. Northern Kentucky RACM

      - improved public transit (implemented)
      - park-and-ride lots
      - pedestrian malls
      - bicycle facilities
      - traffic flow improvements (adopted)
      - auto-restricted zones
      - additional transit, bicycle facilities, traffic flow improvements

5. Strategies 1, 2, and 3, above will be sufficient to show attainment by 1987 for Henderson, Fayette, and Boyd Counties

6. Daviess and McCracken Counties attain the new ozone standard of 0.12 ppm so that no additional controls are necessary

   a. Kentucky is seeking redesignation of those counties to attainment

III. NEW SOURCE REVIEW

An emission offset policy, including a "banking" provision, is to be followed for all new sources of all pollutants. Banked emissions may not be used, however, if they interfere with achievement of reasonable further progress towards attainment.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing coal-burning sources

   a. Class I Counties (Jefferson, McCracken):

      - Fuel input > 250 MM Btu per hr: 1.2 lb SO_2 per MM Btu
      - Fuel input < 10 MM Btu per hr: 5.0 lb SO_2 per MM Btu
      - unchanged from prerevision SIP

   b. Class II Counties (Bell, Clark, Woodford)

      - Fuel input > 250 MM Btu per hr: 2.3 lb of SO_2 per MM Btu
      - Fuel input < 10 MM Btu per hr: 6.0 lb lb SO_2 per MM Btu
      - 2.3 lb SO_2 is a change from the previous SIP of 1.8 lb SO_2 per MM Btu

   c. Class III (Pulaski)

      - Fuel input < 10 MM Btu per hr: 7.0 lb SO_2 per MM Btu
      - Fuel input > 250 MM Btu per hr: 3.3 lb SO_2
      - limit changed from 3.2 to 3.3 lb

d. Class IV (Webster, Hancock)

- Fuel input < 10 MM Btu per hr: 8.0 lb SO_2 per MM Btu
- Fuel input > 250 MM Btu per hr: 5.2 lb SO_2
- same as in prerevision SIP

e. Class IV A (Muhlenberg)

- new class added
- same as Class IV, except for sources with fuel input between 1,500 and 21,000 MM Btu per hr: 2.3 lb SO_2 per MM Btu; and with fuel input > 21,000 MM Btu per hr: 3.1 lb SO_2 per MM Btu

f. Class V (all remaining counties)

- Fuel input < 10 MM Btu per hr: 9.0 lb SO_2 per MM Btu
- Fuel input > 250 MM Btu per hr: 6.0 lb SO_2

g. Class V A (Boyd)

- new class
- same as V, except for sources with fuel input > 1,500 MM Btu per hr: 0.6 lb SO_2 per MM Btu

h. In all classes, limits for sources with fuel input between 10 and 250 MM Btu per hr are interpolated within the ranges given

2. New sources: NSPS

B. TSP

1. Limits for existing sources unchanged from prerevision SIP

a. Class I: Louisville (AQCR 078), Cincinnati (AQCR 079), Paducah-Cairo (AQCR 072), Huntington-Ashland (AQCR 103) and Evansville-Henderson (AQCR 077)

- sources with fuel input < 10 MM Btu per hr: 0.56 lb PM per MM Btu
- fuel input > 10,000 MM Btu per hr: 0.11 lb PM per MM Btu

b. Class II: Bluegrass (AQCR 102), Appalachian (AQCR 101), and North Central (AQCR 104)

- fuel input sources < 10 MM Btu per hr: 0.75 lb PM per MM Btu
- fuel input sources > 10,000 MM Btu per hr: 0.15 lb PM

c. Class III: South Central (AQCR 105)

- fuel input < 10 MM Btu per hr: 0.80 lb PM
- fuel input > 10,000 MM Btu per hr: 0.18 lb PM

d. For all classes: limits interpolated within this class range from sources of intermediate size

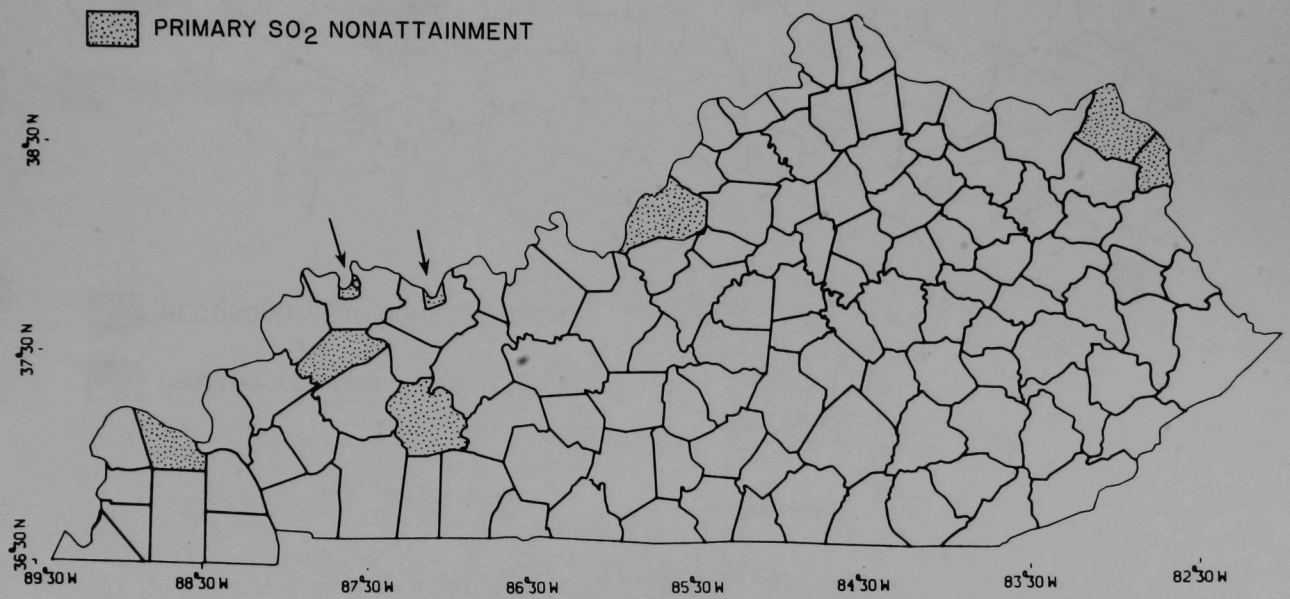


Fig. IV.44. Kentucky: SO_2 Nonattainment Areas as Designated May 1979

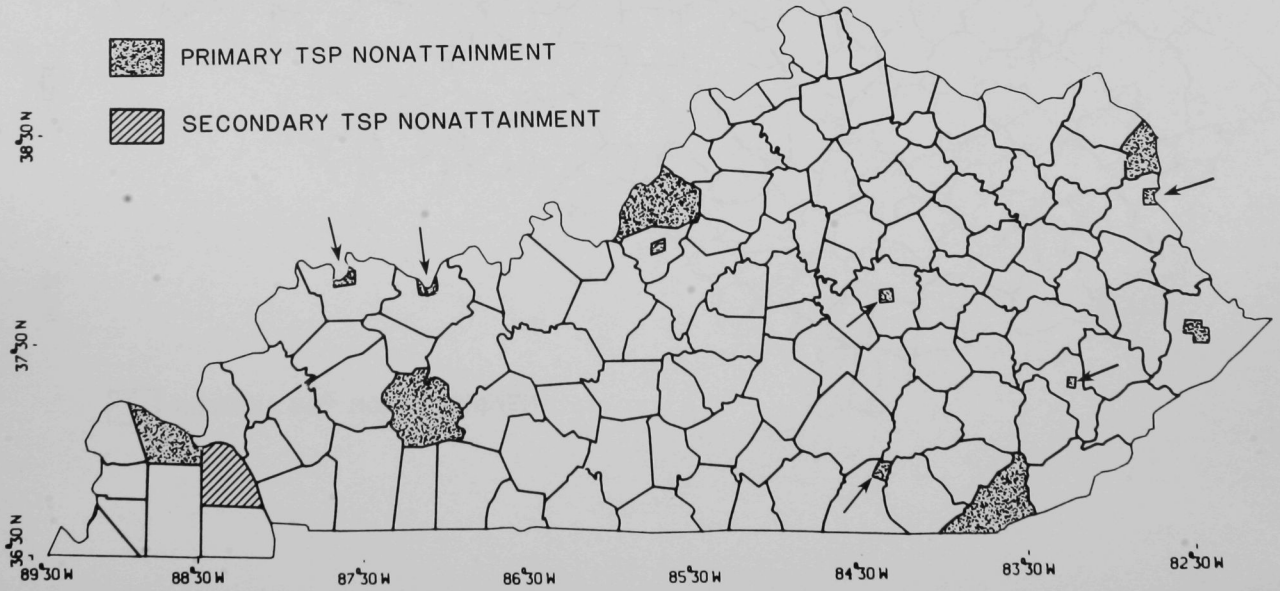


Fig. IV.45. Kentucky: TSP Nonattainment Areas as Designated May 1979

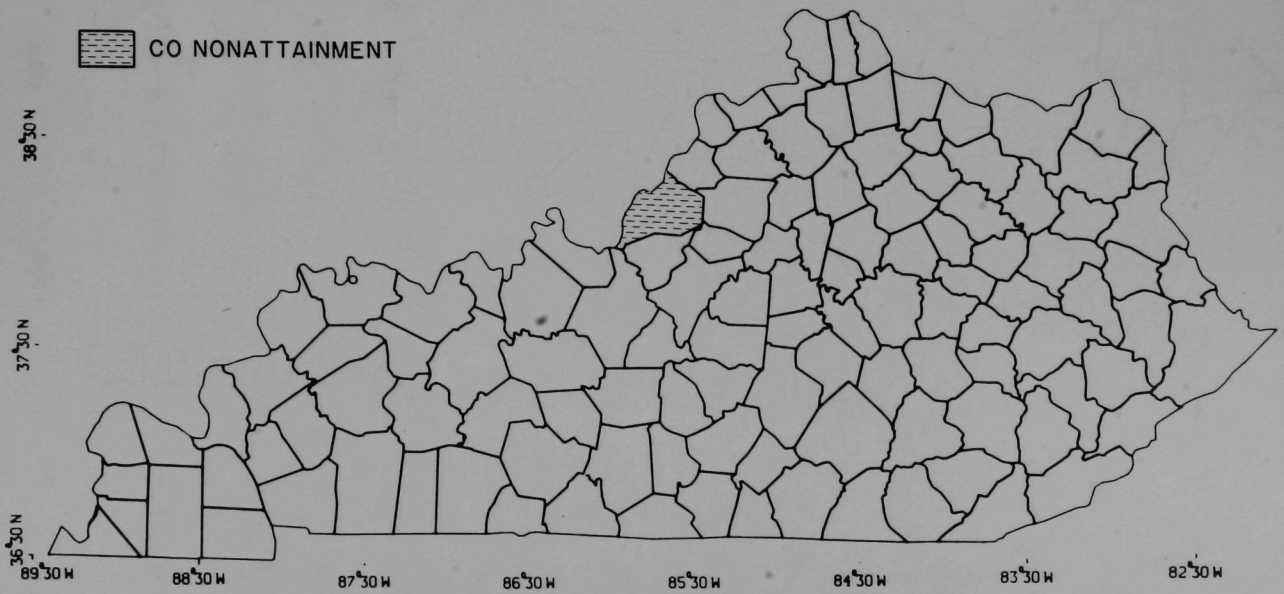


Fig. IV.46. Kentucky: CO Nonattainment Areas as Designated May 1979

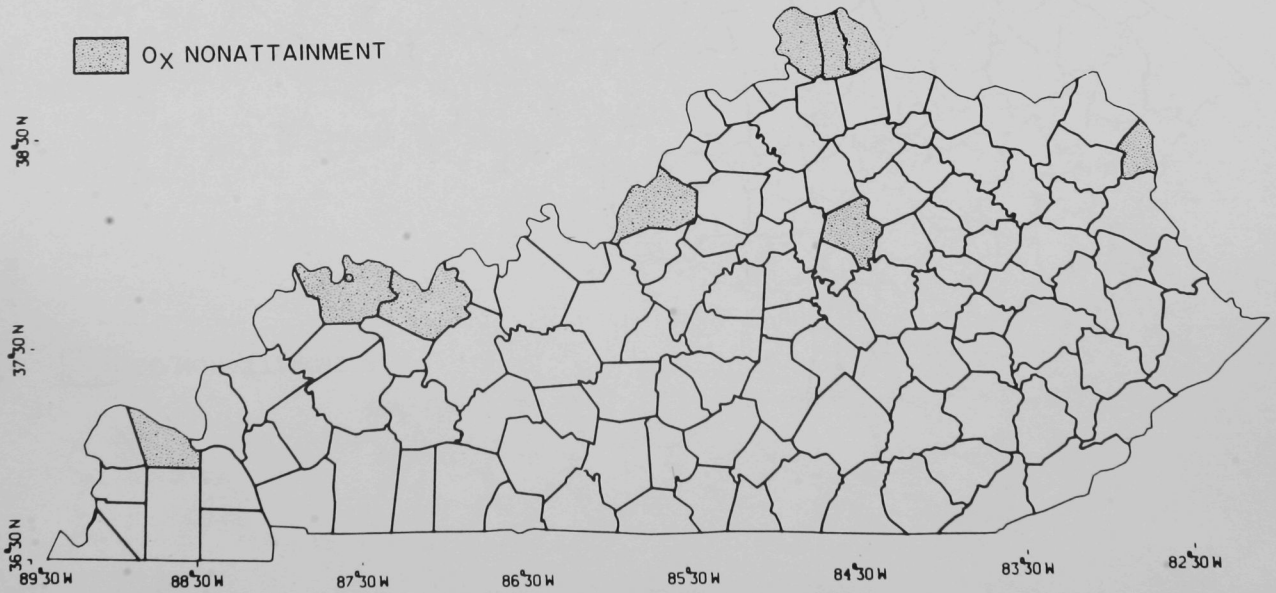


Fig. IV.47. Kentucky: O_x Nonattainment Areas as Designated May 1979

Table IV.8. Kentucky: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$, or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	100	36.96	89.09	61. (1)	11. (1)	107. (1)	47. (1)			
2	100	37.07	88.97	121. (1)	16. (1)	96. (1)	48. (1)	19. (1)		
3	100	36.96	89.09					23. (1)		
4	160	36.99	85.91	64. (1)	9. (1)	101. (1)	50. (1)	31. (1)		
5 *	200	0.0	0.0	53. (1)		121. (1)				
6	200	36.77	83.70			81. (1)				
7	280	39.06	84.35	79. (1)	15. (1)	157. (1)	61. (2)			
8	280	38.87	84.61	45. (1)	15. (1)	155. (1)		23. (1)		
9	280	38.99	84.75	163. (1)		47. (1)				
10	280	38.92	84.85	119. (1)		98. (1)				
11 *	280	39.06	84.35					12. (1)		
12	280	39.00	84.63							265. (4)
13	280	39.01	84.61	65. (1)	18. (1)	94. (1)	46. (1)	26. (1)		
14	300	39.02	84.57	50. (1)	11. (1)	86. (1)	42. (1)	24. (1)		
15	340	38.41	82.60	83. (1)	16. (1)	156. (1)	66. (2)	35. (1)		
16	340	38.47	82.64	134. (1)	29. (1)	253. (2)	77. (3)	85. (2)	10. (2)	502. (4)
17	340	38.45	82.65	91. (1)	13. (1)	115. (1)	49. (1)	23. (1)		
18	340	38.49	82.68	59. (1)	15. (1)	201. (2)	69. (2)	25. (1)		
19	340	38.48	82.64	61. (1)	10. (1)	265. (3)	86. (3)	40. (1)		
20	340	38.46	82.63			174. (1)	84. (3)			
22	360	38.45	82.61	73. (1)	20. (1)	192. (1)	73. (2)	36. (1)		
23	360	37.65	84.76	32. (1)	8. (1)	65. (1)	32. (1)	23. (1)		
24	440	37.99	85.72	46. (1)	10. (1)	143. (1)	61. (2)	34. (1)		
25	480	37.11	87.88	36. (1)	8. (1)	92. (1)	49. (1)	21. (1)		
26	500	36.61	88.31	13. (1)	4. (1)	90. (1)	44. (1)	23. (1)		
27	520	39.09	84.50	169. (1)	40. (1)	205. (2)	109. (4)	47. (1)	8. (2)	321. (4)
28	520	38.96	84.40	32. (1)		97. (1)				
29	520	39.01	84.45	72. (1)	4. (1)	106. (1)	55. (1)	24. (1)		
30	560	36.83	89.01	54. (1)	8. (1)	93. (1)	38. (1)	18. (1)		
31	580	38.74	85.06	36. (1)	9. (1)	97. (1)	38. (1)			
32	580	38.68	85.18	72. (1)	16. (1)	114. (1)	48. (1)	17. (1)		
33	580	38.74	85.06					14. (1)		
34	620	38.30	83.17	35. (1)	6. (1)	135. (1)	57. (2)	13. (1)		
35	700	36.88	87.49	44. (1)	5. (1)	95. (1)	42. (1)	20. (1)		
36	720	37.99	84.18	30. (1)	6. (1)	95. (1)	41. (1)	30. (1)		
37	920	37.77	87.11	110. (1)	24. (1)	195. (1)	107. (4)	51. (1)	15. (4)	214. (4)
38	920	37.75	87.12	80. (1)	13. (1)	102. (1)	55. (1)	29. (1)		
39	920	37.78	87.07	79. (1)	18. (1)	135. (1)	66. (2)	32. (1)		
40	920	37.73	87.08	54. (1)		123. (1)				
41	920	37.78	87.10	78. (1)	20. (1)	135. (1)	69. (2)	27. (1)		
42	920	37.77	87.13	116. (1)	22. (1)	181. (1)	84. (3)	29. (1)		
43	1160	38.02	84.54			114. (1)	37. (1)			
44	1160	38.06	84.47	57. (1)	8. (1)	91. (1)	41. (1)	30. (1)		
45	1160	38.04	84.51	53. (1)	14. (1)	89. (1)	38. (1)	29. (1)		

Table IV.8. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
46 *	1160	0.0	0.0	84. (1)	27. (1)	87. (1)	40. (1)	46. (1)	13. (4)	231. (4)
47	1160	38.04	84.51	7. (1)		216. (2)				
49	1160	38.02	84.54	44. (1)	10. (1)			30. (1)		
50	1240	37.67	82.77	18. (1)		81. (1)				
51	1320	38.80	84.84	30. (1)	8. (1)	88. (1)	37. (1)	22. (1)		
52	1320	38.32	84.83	22. (1)	4. (1)	85. (1)		11. (1)		
53	1360	36.50	88.86	55. (1)	11. (1)	111. (1)	44. (1)	22. (1)		
54	1380	38.78	84.90	79. (1)	12. (1)	139. (1)	51. (1)	12. (1)		
55	1500	37.48	86.29	62. (1)	12. (1)	122. (1)	47. (1)	17. (1)		
56	1540	38.49	82.68			113. (1)	53. (1)			
57	1540	38.72	82.97	43. (1)	9. (1)	290. (3)	108. (4)	27. (1)		
58	1540	38.49	82.68	24. (1)	4. (1)			23. (1)		
59	1580	37.94	86.90	62. (1)	17. (1)	125. (1)	57. (2)	18. (1)		
60 *	1580	0.0	0.0	46. (1)	6. (1)	92. (1)	49. (1)	22. (1)		
61	1600	38.06	86.29			69. (1)				
62	1600	38.00	85.95			124. (1)				
63	1600	37.71	85.85	32. (1)	9. (1)	92. (1)	36. (1)	28. (1)		
64	1600	37.71	85.89	37. (1)	9. (1)	117. (1)	42. (1)	23. (1)		
65	1640	36.84	83.32	155. (1)		121. (1)				
66	1660	38.40	84.31	28. (1)	8. (1)	100. (1)	55. (1)	28. (1)		
67	1760	37.84	87.59			118. (1)	68. (2)			
68	1760	37.83	87.60	154. (1)	26. (1)	110. (1)	56. (1)			
69	1760	37.82	87.58	42. (1)		112. (1)	50. (1)	25. (1)		
70	1760	37.84	87.59	427. (3)	49. (1)			35. (1)		
71	1760	37.86	87.58	232. (1)	32. (1)	211. (2)	91. (3)	53. (1)	6. (1)	
72	1760	37.83	87.57	110. (1)	18. (1)	188. (1)	84. (3)	34. (1)		
73	1760	37.83	87.60					33. (1)		
74	1760	37.72	87.48	46. (1)	10. (1)	132. (1)	43. (1)	15. (1)		
75	1760	37.84	87.58	150. (1)	26. (1)	149. (1)	66. (2)	29. (1)		
76	1760	37.86	87.58							159. (2)
77	1840	37.33	87.49	37. (1)	7. (1)	97. (1)	51. (1)	31. (1)		
78	1920	38.14	85.69	78. (1)	21. (1)	253. (2)	90. (3)	46. (1)		
79	1920	38.19	85.81			131. (1)	61. (2)			
80	1920	38.19	85.81					52. (1)		
82	1920	38.19	85.81	187. (1)	36. (1)				16. (4)	
83	1920	38.25	85.81			105. (1)	62. (2)			
84	1920	38.13	85.88	55. (1)	20. (1)	96. (1)	45. (1)	24. (1)		
85	1920	38.25	85.81	73. (1)				44. (1)		
86	1920	38.20	85.65	102. (1)	28. (1)	115. (1)	51. (1)	44. (1)		
87	1920	38.21	85.85	133. (1)	47. (1)	137. (1)	79. (3)	34. (1)		
88	1920	38.18	85.86	425. (3)	46. (1)					
89	1920	38.19	85.88	569. (4)	41. (1)					
90	1920	38.06	85.89			154. (1)	75. (2)			
91	1920	38.14	85.58	52. (1)	16. (1)	97. (1)	37. (1)	18. (1)		

Table IV.8. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
93	1920	38.27	85.79	128. (1)	37. (1)			47. (1)		
94	1920	38.18	85.74	76. (1)	25. (1)	121. (1)	68. (2)	42. (1)		
95	1920	38.18	85.73	96. (1)		108. (1)	60. (2)			
96	1920	38.22	85.63	57. (1)		133. (1)	63. (2)			
97	1920	38.21	85.76	245. (1)	56. (1)	119. (1)	67. (2)	84. (2)	20. (4)	353. (4)
98	1920	38.23	85.76	44. (1)						
99	1920	38.26	85.71	83. (1)	26. (1)	111. (1)	55. (1)	43. (1)		461. (4)
100	1920	38.25	85.75	299. (2)	40. (1)	213. (2)	104. (4)	58. (1)		392. (4)
101	1920	38.23	85.70	78. (1)		98. (1)			15. (4)	
102 *	1920	0.0	0.0					79. (2)		
103	1920	38.25	85.81	310. (2)	57. (1)	119. (1)	60. (2)	47. (1)		
105	1920	38.25	85.76						13. (4)	
106	1920	38.21	85.67						14. (4)	
107	1920	38.25	85.75						9. (2)	
108	1920	38.19	85.80						10. (3)	
109	1920	38.23	85.76						16. (4)	
110	1920	38.22	85.83			151. (1)	73. (2)			
111	1920	38.24	85.83	263. (1)	80. (2)			43. (1)		
112	1920	38.26	85.76						27. (4)	
113	1920	38.25	85.76						10. (2)	
114	1920	38.20	85.70			125. (1)			9. (2)	
116	2020	39.02	84.61	71. (1)	20. (1)	110. (1)	52. (1)	29. (1)		
117	2020	39.07	84.53	75. (1)		130. (1)				231. (4)
118	2020	39.07	84.51	38. (1)		159. (1)				
119 *	2020	0.0	0.0	19. (1)	6. (1)	101. (1)		53. (1)		
121 *	2120	37.04	78.08	13. (1)	3. (1)	100. (1)	53. (1)	31. (1)		
122	2140	38.12	82.60	22. (1)	6. (1)	196. (2)	63. (2)	25. (1)		
123	2340	36.84	86.88	30. (1)	8. (1)	92. (1)		20. (1)		
124	2460	37.08	88.60			128. (1)	57. (2)	66. (1)		204. (4)
125	2460	37.06	88.66	170. (1)	20. (1)	91. (1)	38. (1)	18. (1)		
126	2460	37.07	88.64	3. (1)	3. (1)	133. (1)	70. (2)	41. (1)		
127	2460	37.07	88.62	71. (1)	10. (1)	140. (1)	60. (2)	36. (1)		
128	2460	37.09	88.63	78. (1)	18. (1)	96. (1)	42. (1)	26. (1)		
129	2460	37.05	88.59	85. (1)	14. (1)	118. (1)	50. (1)	27. (1)		
130	2460	37.08	88.60	207. (1)	17. (1)					
131	2460	37.07	88.86	245. (1)		127. (1)				
132	2460	37.11	88.87	192. (1)		91. (1)				
133	2460	37.08	88.80	173. (1)		120. (1)				
134	2460	37.17	88.85	289. (2)	33. (1)					
136	2460	37.08	88.60		36. (1)				18. (4)	
137	2460	37.13	88.81		37. (1)	120. (1)	46. (1)			
138	2460	37.09	88.86	329. (2)	27. (1)					
139	2460	37.07	88.77	315. (2)	27. (1)					

Table IV.8. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
140	2460	37.13	88.74	197. (1)	20. (1)					
141	2460	37.14	88.82	341. (2)	27. (1)	119. (1)	36. (1)			
142	2460	37.12	88.76	376. (3)	36. (1)	127. (1)	42. (1)			
143	2460	37.12	88.86	361. (2)						
144	2460	37.08	88.81	429. (3)	35. (1)					
146	2460	37.13	88.81	303. (2)	14. (1)			10. (1)		
147	2520	37.57	84.29	21. (1)	5. (1)	74. (1)	36. (1)	19. (1)		
148	2520	37.75	84.29	30. (1)	9. (1)	144. (1)	76. (3)	34. (1)		
149	2600	37.03	88.35					20. (1)		
150	2600	37.03	88.34			125. (1)	46. (1)			
151	2600	37.03	88.35	65. (1)	13. (1)	132. (1)	49. (1)			
152	2600	37.03	83.34	44. (1)	11. (1)			19. (1)		
153	2640	38.64	83.75	87. (1)	11. (1)	107. (1)	50. (1)	23. (1)		
154	2700	38.00	86.17			71. (1)				
155	2960	37.31	87.00	145. (1)						
156	2960	37.22	87.05	202. (1)	25. (1)					
157	2960	37.19	86.98	172. (1)	16. (1)					
158	2960	37.20	86.94	394. (3)	25. (1)					
159	2960	37.28	87.01	158. (1)	16. (1)	203. (2)	75. (2)			
160	2960	37.30	87.12	86. (1)	21. (1)	111. (1)	55. (1)	36. (1)		
161	2960	37.29	87.12	189. (1)	21. (1)	147. (1)	70. (2)			
162	3000	37.82	85.47	38. (1)	9. (1)	113. (1)	42. (1)	22. (1)		
163	3080	37.21	86.90	176. (1)	22. (1)	127. (1)	44. (1)			
164	3080	37.28	86.96	180. (1)	23. (1)					
165	3080	37.29	86.95			123. (1)	49. (1)			
166	3080	37.30	86.95	186. (1)	24. (1)					
167	3080	37.31	86.94	198. (1)	20. (1)					
168	3080	37.30	86.95			118. (1)	50. (1)			
169	3080	37.37	86.84	215. (1)	27. (1)					
170	3080	37.32	86.93	78. (1)	15. (1)					
172	3100	38.48	85.47			86. (1)				
173 *	3100	0.0	0.0	56. (1)	16. (1)	98. (1)	45. (1)	24. (1)		
174 *	3120	0.0	0.0	36. (1)		113. (1)				
175 *	3260	0.0	0.0	31. (1)	7. (1)	90. (1)	41. (1)	11. (1)		
176	3280	37.25	83.20	11. (1)		129. (1)				
177	3300	37.48	82.52	8. (1)		202. (2)				
178 *	3460	37.10	78.60	81. (1)	16. (1)	109. (1)	50. (1)	29. (1)		
179 *	3560	38.18	89.44	35. (1)	5. (1)	89. (1)	43. (1)	15. (1)		
180 *	3680	0.0	0.0	40. (1)	11. (1)	102. (1)	51. (1)	27. (1)		
181	3740	36.72	86.58	35. (1)	8. (1)	111. (1)	50. (1)	28. (1)		
182	3860	36.79	88.07			78. (1)	31. (1)			
183	3880	38.71	85.38			86. (1)				
184	3880	38.61	85.32			111. (1)				

Table IV.8. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
186	3960	37.00	86.43			147. (1)	63. (2)			
187	3960	37.00	86.46	28. (1)		68. (1)		35. (1)		
188	3960	36.99	86.45	45. (1)	9. (1)	112. (1)	38. (1)	21. (1)		
189	3960	37.00	86.43	32. (1)	7. (1)			32. (1)		
190	4040	36.95	84.09	19. (1)	4. (1)	184. (1)	63. (2)	39. (1)		

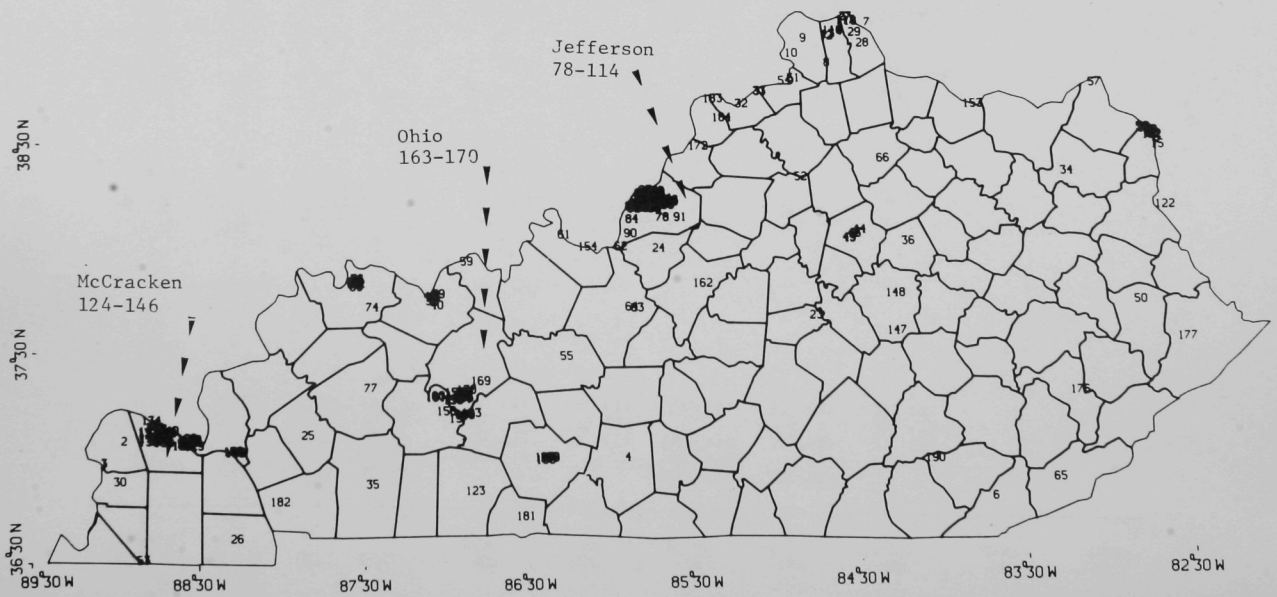


Fig. IV.48. Kentucky: Locations of SAROAD Monitors (See Table IV.8 for Monitor Numbers)

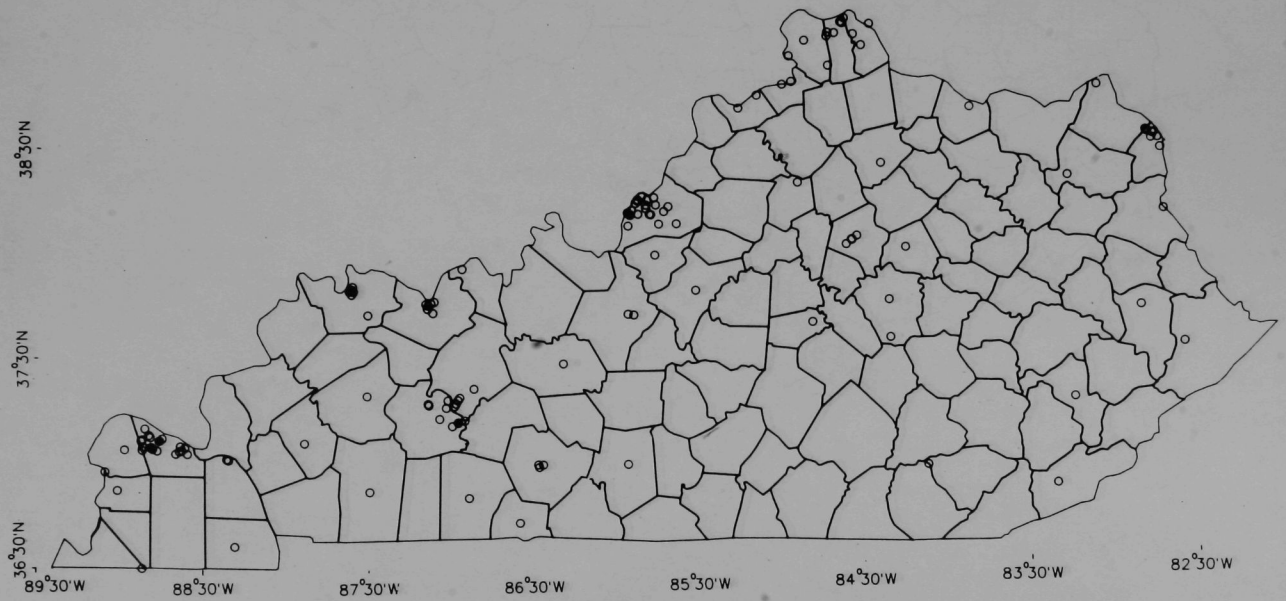


Fig. IV.49. Kentucky: Monitors Reporting Adequate Data on 24-hr Average SO_2; Violations Shown by Shaded Circles

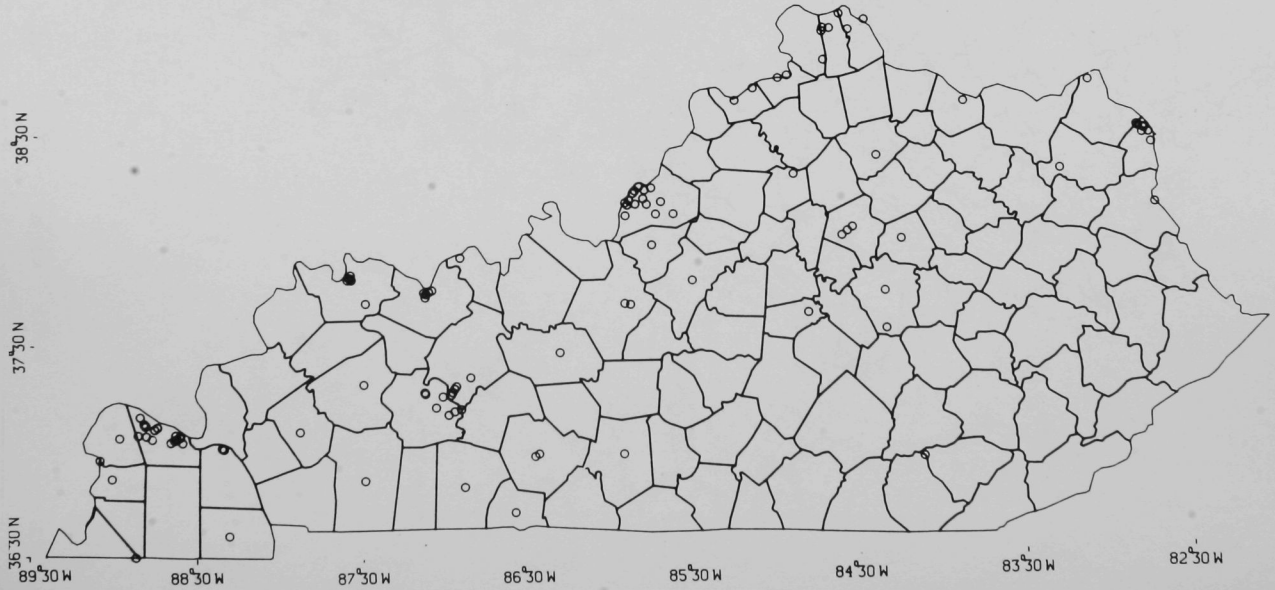


Fig. IV.50. Kentucky: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

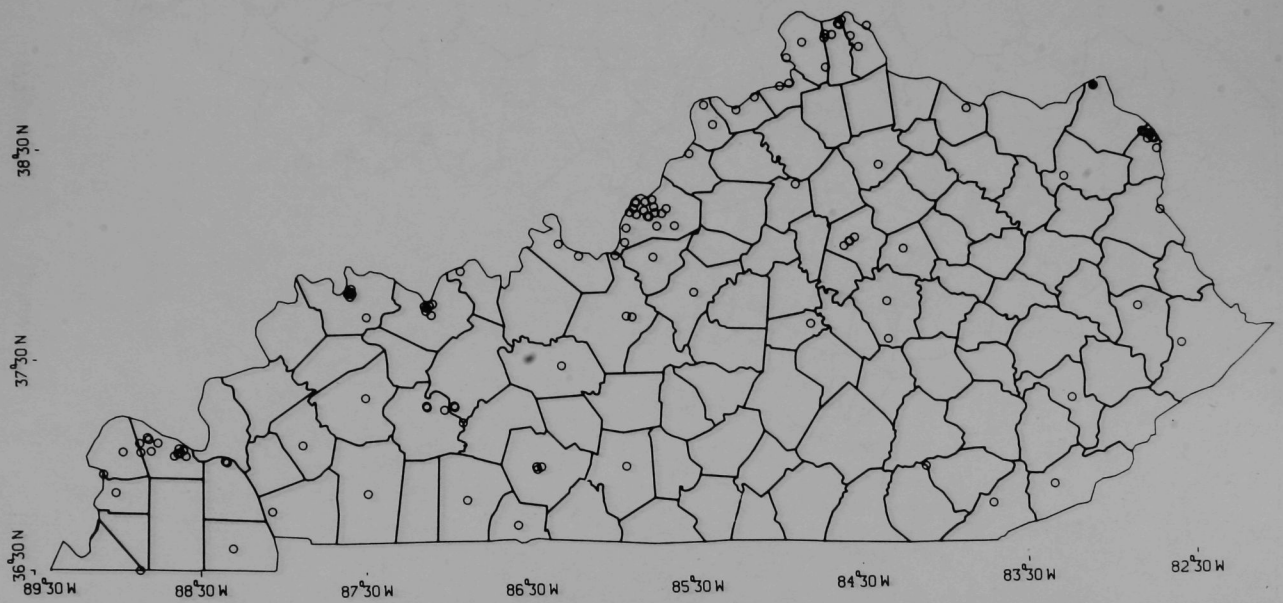


Fig. IV.51. Kentucky: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

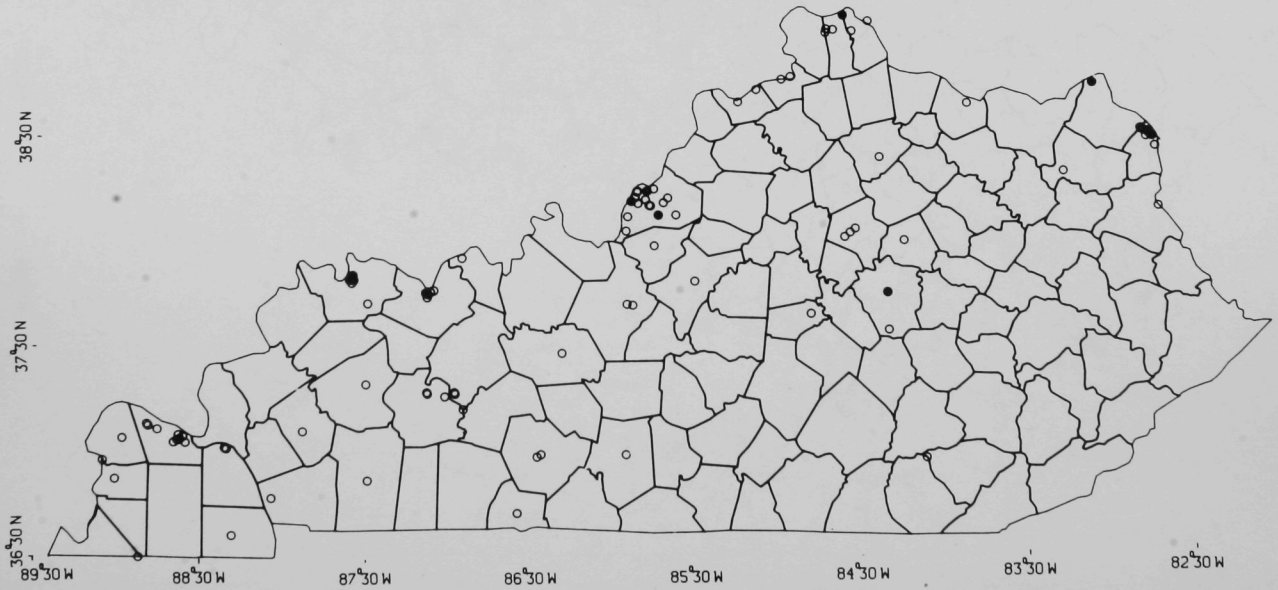


Fig. IV.52. Kentucky: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

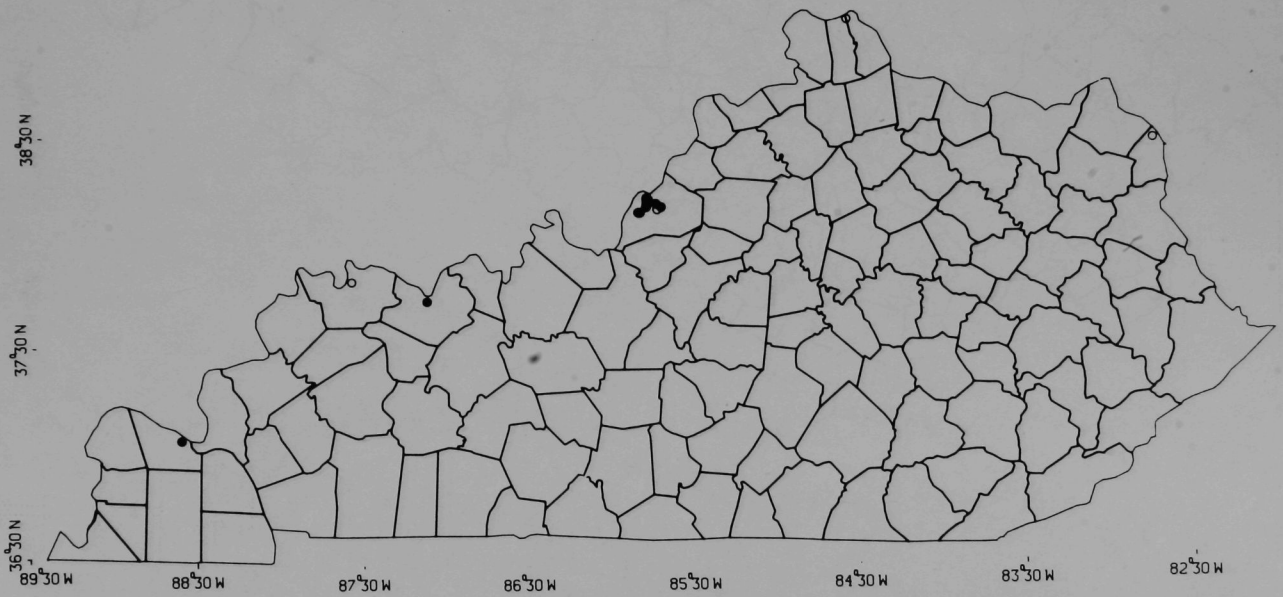


Fig. IV.53. Kentucky: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

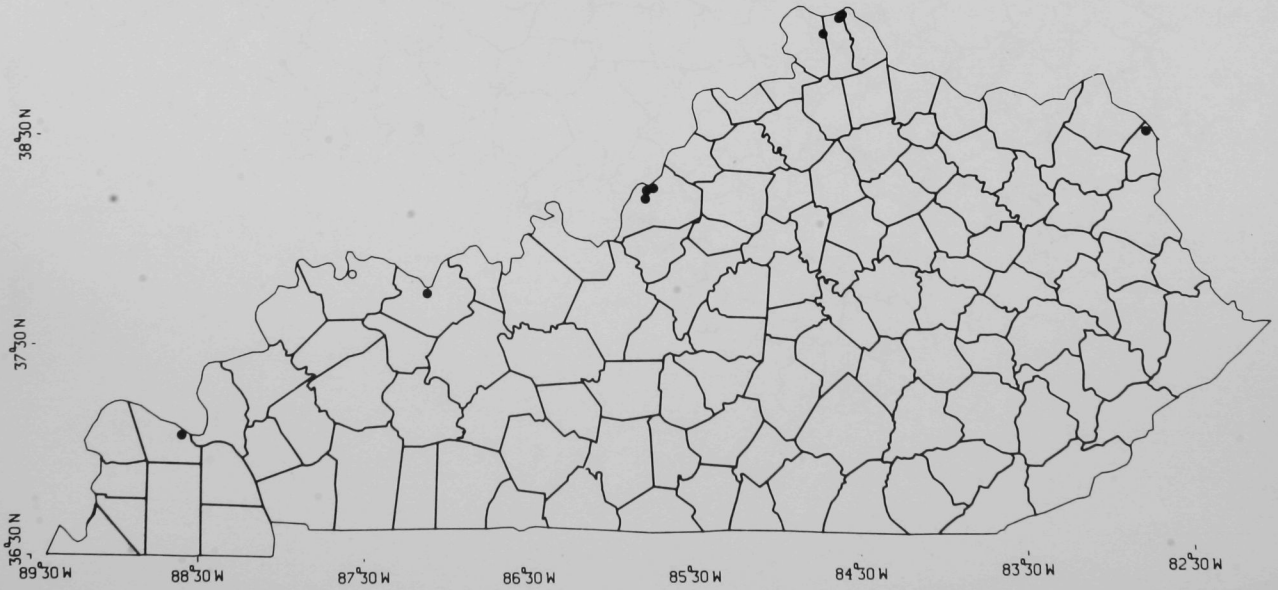


Fig. IV.54. Kentucky: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

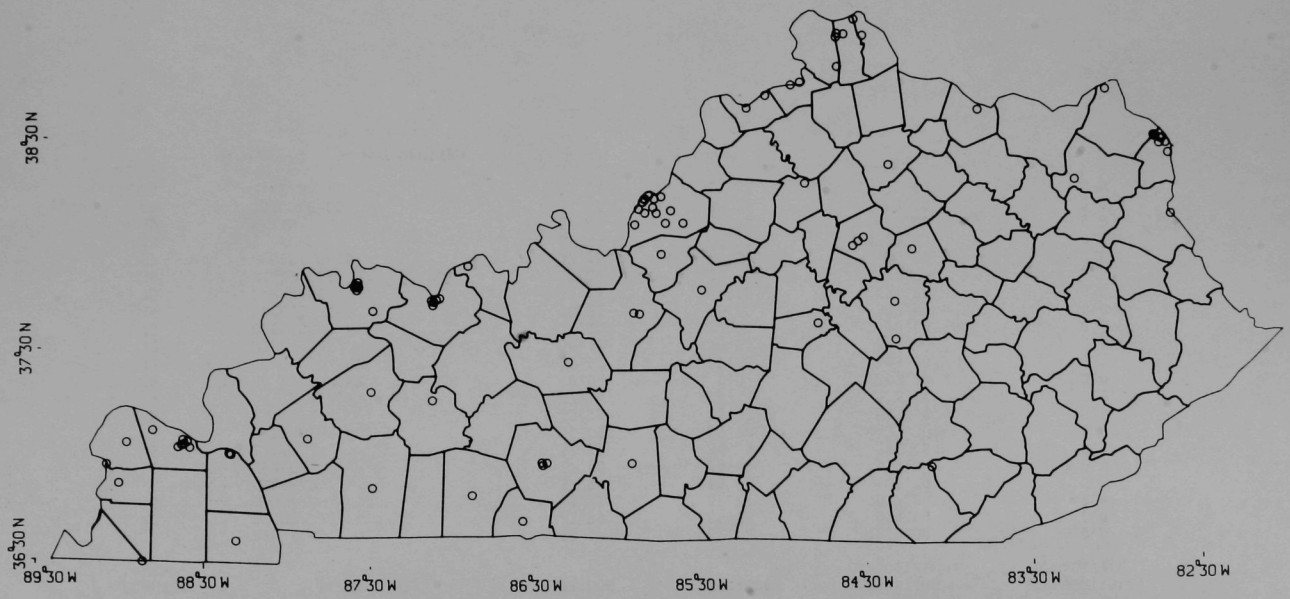


Fig. IV.55. Kentucky: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table V.9. Kentucky: Power Plant Data

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	BIG SANDY	38.17	82.62	1060.00	0.0
2	BROWN	37.79	84.71	694.00	0.0
3	CANE RUN	38.18	85.89	1017.00	0.0
4	COLEMAN	37.96	86.79	521.30	0.0
5	COOPER	37.00	84.59	354.00	0.0
6	DALE	37.83	84.26	194.00	0.0
7	EAST BEND NO. 1	39.05	84.70	28.30	0.0
8	GHENT 1	38.75	85.03	511.00	0.0
9	GREEN RIVER	37.36	87.12	263.00	0.0
10	* HENDERSON #2	0.0	0.0	300.00	0.0
11	HENDERSON STA 1	37.52	87.63	43.00	0.0
12	MILL CREEK	38.10	85.91	711.00	0.0
13	OWENSBORO #1	37.78	87.09	50.00	0.0
14	PADDYS RUN	38.22	85.85	337.50	0.0
15	PARADISE	37.26	86.98	2558.20	0.0
16	PINEVILLE	36.80	83.76	37.50	0.0
17	ROBERT REID	37.65	87.50	80.00	0.0
18	SHAWNEE	37.14	88.78	1750.00	0.0
19	SMITH	37.80	87.06	416.00	0.0
20	TRIMBLE CO	38.60	85.35	48.00	0.0
21	TYRONE	38.05	84.85	135.00	0.0

N NUCLEAR * NOT PLOTTED

Table IV.10. Kentucky: Fuel Use Data

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	BIG SANDY	1.25	2101.30	0.10	88.60	0.0
2	BROWN	1.68	1339.00	0.25	7.07	0.0
3	CANE RUN	3.78	1628.30	0.0	0.0	434.90
4	COLEMAN	3.22	1545.10	0.0	0.0	509.10
5	COOPER	2.16	651.72	0.0	0.0	0.0
6	DALE	1.52	356.75	0.20	2.14	0.0
7	EAST BEND NO. 1	0.0	0.0	0.0	0.0	0.0
8	GHENT 1	3.30	1188.50	0.20	15.60	0.0
9	GREEN RIVER	2.61	577.52	0.0	0.0	0.0
10	* HENDERSON #2	3.46	982.10	0.40	8.11	0.0
11	HENDERSON STA 1	3.92	111.00	0.0	0.0	0.0
12	MILL CREEK	3.88	1295.20	0.0	0.0	155.40
13	OWENSBORO #1	3.53	16.70	3.50	1.20	0.0
14	PADDYS RUN	3.13	50.80	0.0	0.0	99.60
15	PARADISE	4.24	4719.80	0.23	60.32	0.0
16	PINEVILLE	1.43	30.31	0.02	0.92	0.0
17	ROBERT REID	3.55	240.40	0.10	3.74	0.0
18	SHAWNEE	3.24	4439.30	0.20	25.19	0.0
19	SMITH	3.53	1010.00	3.50	6.10	0.0
20	TRIMBLE CO	0.0	0.0	0.0	0.0	0.0
21	TYRONE	0.93	63.03	0.20	23.62	0.0

N NUCLEAR * NOT PLOTTED

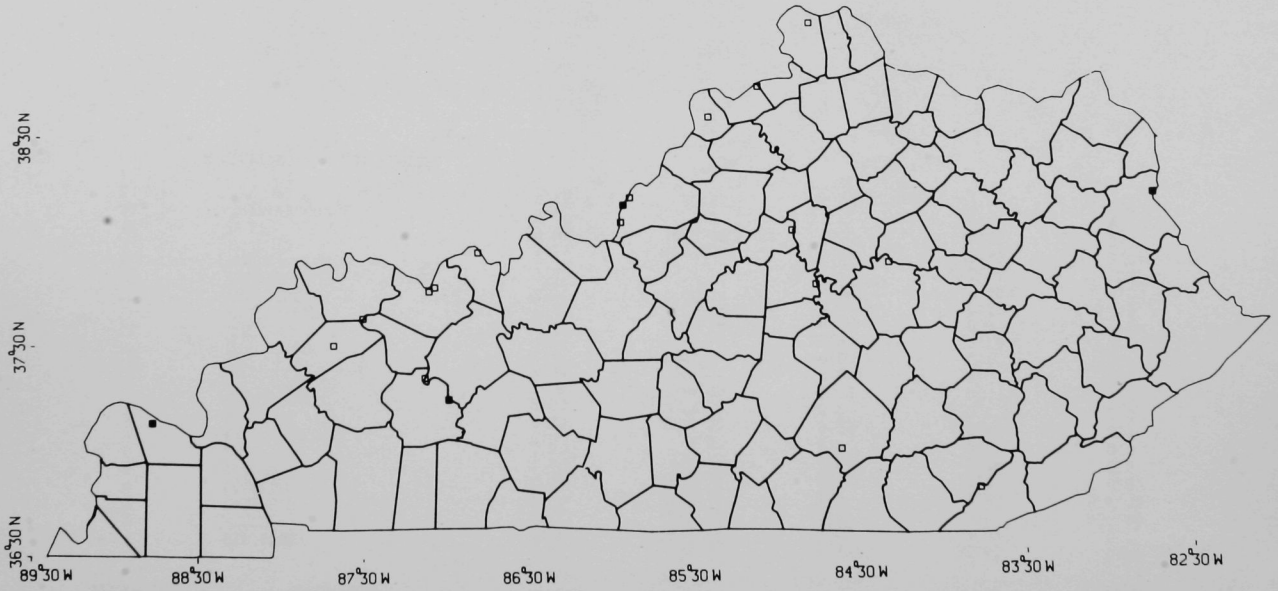


Fig. IV.56. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000 MW; Open, <1000 MW. Triangle = Nuclear)

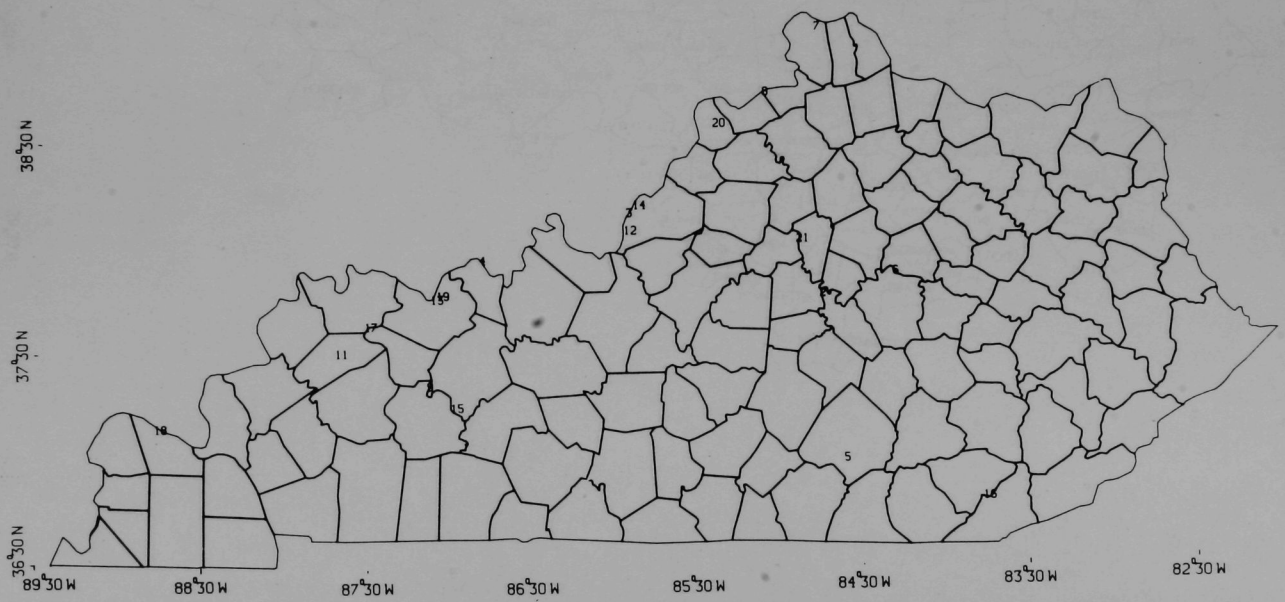


Fig. IV.57. Power Plant Key (See Tables IV.9 and IV.10 for Identification and Fuel Use Data)

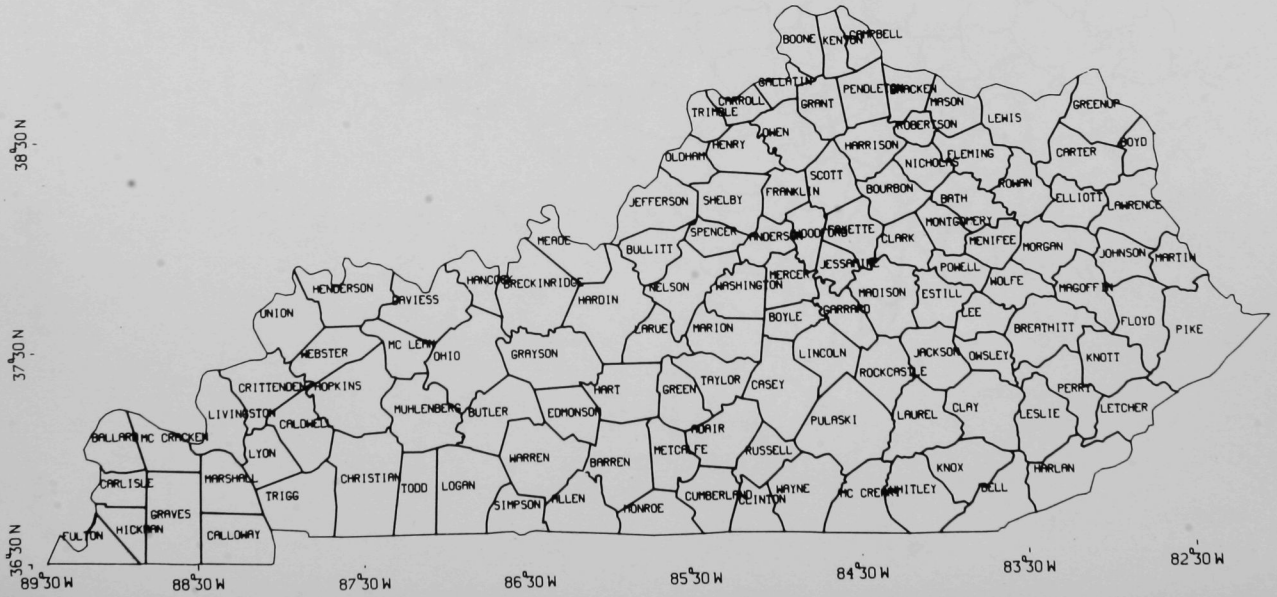


Fig. IV.58. Kentucky: Key to Counties

REGION IV: MISSISSIPPI

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	22	0
	1 yr			18	0
TSP	24 hr	1	0	32	0
	1 yr			28	1
NO_x	1 yr	0[b]	-	2	0
CO	8 hr	0[b]	-	0[b]	0
O_x	1 hr	0[b]	-	4	3

[a]Designations of the nonattainment areas are as of May 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	11
Nuclear	0
Total	11

MISSISSIPPI: Final SIP, 4/79

I. SOURCES OF THE PROBLEM

There is only one nonattainment area in the state -- the southern half of the town of Laurel, which is in nonattainment for TSP. State officials have noted that other parts of Mississippi were only marginally in attainment and would require continued attention. The primary source of TSP in Laurel is the Masonite Corporation woodworking facility. Urban renewal projects add to the problem.

II. ATTAINMENT STRATEGIES

A. TSP

1. Laurel

a. Install controls at Masonite plant

b. Control or eliminate minor incinerators

c. Limit emissions from urban renewal construction

III. NEW SOURCE REVIEW

Regulations for nonattainment areas reflect the Clean Air Act requirements of LAER, compliance with air quality regulations by all sources owned or operated by the applicant, and an emissions offset policy.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing sources

a. 4.8 lb SO_2 per MM Btu

2. Modified sources with fuel input < 250 MM Btu per hr

a. 2.4 lb SO_2 per MM Btu

b. "Modified" is defined as any physical change which increases the amount of emissions of a regulated pollutant

3. No source may increase SO_2 emissions over the 1970 level without approval of the state

B. TSP

1. Existing fossil-fuel boilers

   a. Fuel input 0 - 10 MM Btu per hr: 0.6 lb PM per MM Btu

   b. Fuel input > 10,000 MM Btu per hr: 0.19 lb PM per MM Btu

   c. limits interpolated for size between 10 and 10,000 MM Btu per hr

2. Existing boilers using a combination of fuels

   a. e.g., fossil fuels, bark, wood, sludge

   b. 0.30 grains of PM per dry standard cubic foot

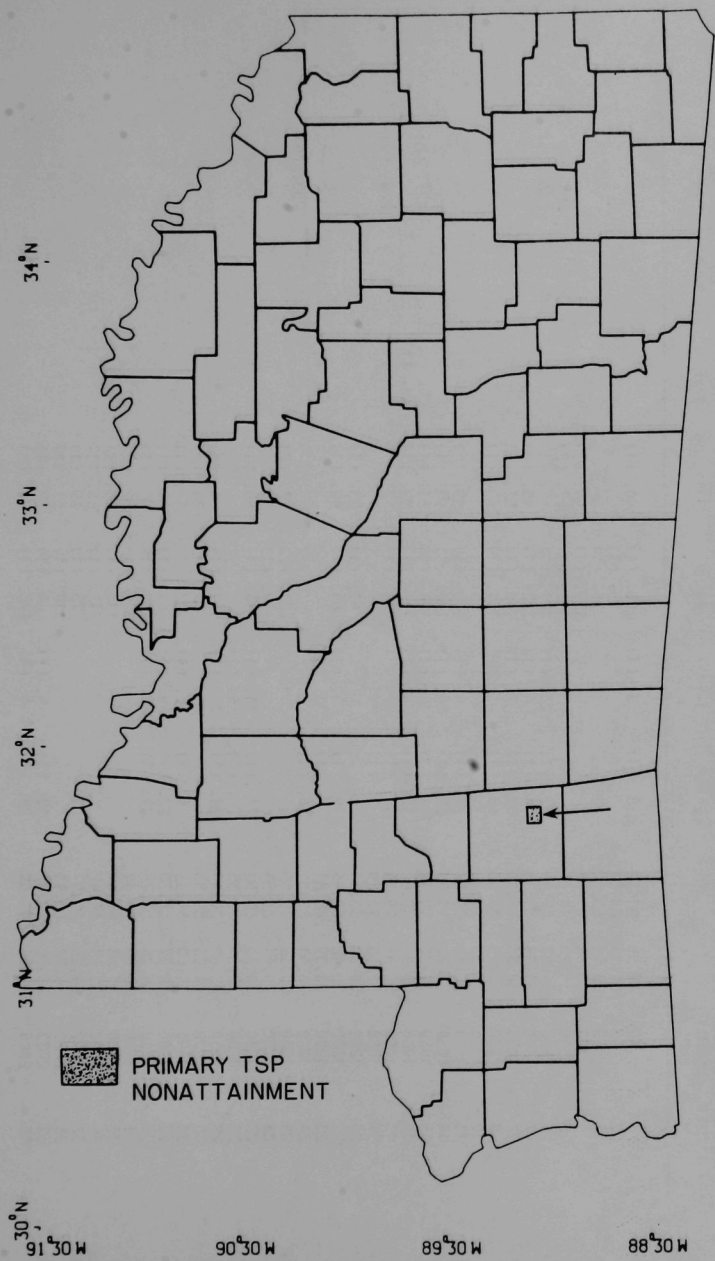


Fig. IV.59. Mississippi: TSP Nonattainment Areas as Designated May 1979

Table IV.11. Mississippi: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$, or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	40	31.56	91.39	3. (1)	3. (1)	90. (1)	46. (1)			
2	60	34.94	88.51			95. (1)				
3	60	34.94	88.52			75. (1)				
4	120	33.06	89.58			130. (1)	44. (1)			
5	540	34.20	90.57			146. (1)	68. (2)			
6	680	34.83	89.99	63. (1)	20. (1)	129. (1)	45. (1)			265. (4)
7	800	31.33	89.33	14. (1)	4. (1)	122. (1)	45. (1)			
8	1020	30.38	89.10	32. (1)	7. (1)	162. (1)	52. (1)			
9	1020	30.40	88.88	63. (1)		161. (1)	43. (1)			
12	1080	32.38	90.20			86. (1)				
13	1080	32.31	90.26	31. (1)	4. (1)	148. (1)	59. (2)			
14	1080	32.27	90.21	28. (1)	5. (1)	129. (1)	52. (1)			
15	1080	32.30	90.19	116. (1)	19. (1)	123. (1)	53. (1)			127. (2)
16 *	1080	0.0	0.0	15. (1)	6. (1)	103. (1)	52. (1)	41. (1)		
18	1080	32.38	90.14	13. (1)		74. (1)				230. (4)
19	1080	32.33	90.20	3. (1)						
20	1280	30.39	88.81			47. (1)	23. (1)			
22	1280	30.42	88.46	19. (1)	4. (1)	81. (1)	42. (1)			
23	1280	30.39	88.81	7. (1)	3. (1)			10. (1)		
24	1280	30.41	88.54	50. (1)						255. (4)
25	1280	30.36	88.55			229. (2)	73. (2)			
26	1280	30.41	88.54			149. (1)	56. (1)			
27	1280	30.35	88.51	71. (1)	11. (1)	96. (1)	50. (1)			
28	1280	30.36	88.55	24. (1)	6. (1)					
29	1360	31.69	89.14	221. (1)	32. (1)	184. (1)	85. (3)			
30	1420	34.36	89.53			69. (1)	34. (1)			
31	1440	31.00	89.45	9. (1)	3. (1)	122. (1)	43. (1)			
32	1460	32.37	88.70	22. (1)	4. (1)	69. (1)	40. (1)			
33	1540	34.26	88.70	19. (1)	5. (1)	110. (1)	48. (1)			
34	1560	33.52	90.19			146. (1)	54. (1)			
35	1620	31.58	90.44			113. (1)	45. (1)			
36	1680	33.49	88.42			112. (1)	48. (1)			
37	2280	31.25	90.47			75. (1)	35. (1)			
38	2620	34.72	88.95			119. (1)	51. (1)			
39	2780	32.30	90.87	12. (1)	4. (1)	64. (1)	32. (1)			
40 *	2800	35.94	91.00	25. (1)	4. (1)	173. (1)	71. (2)			

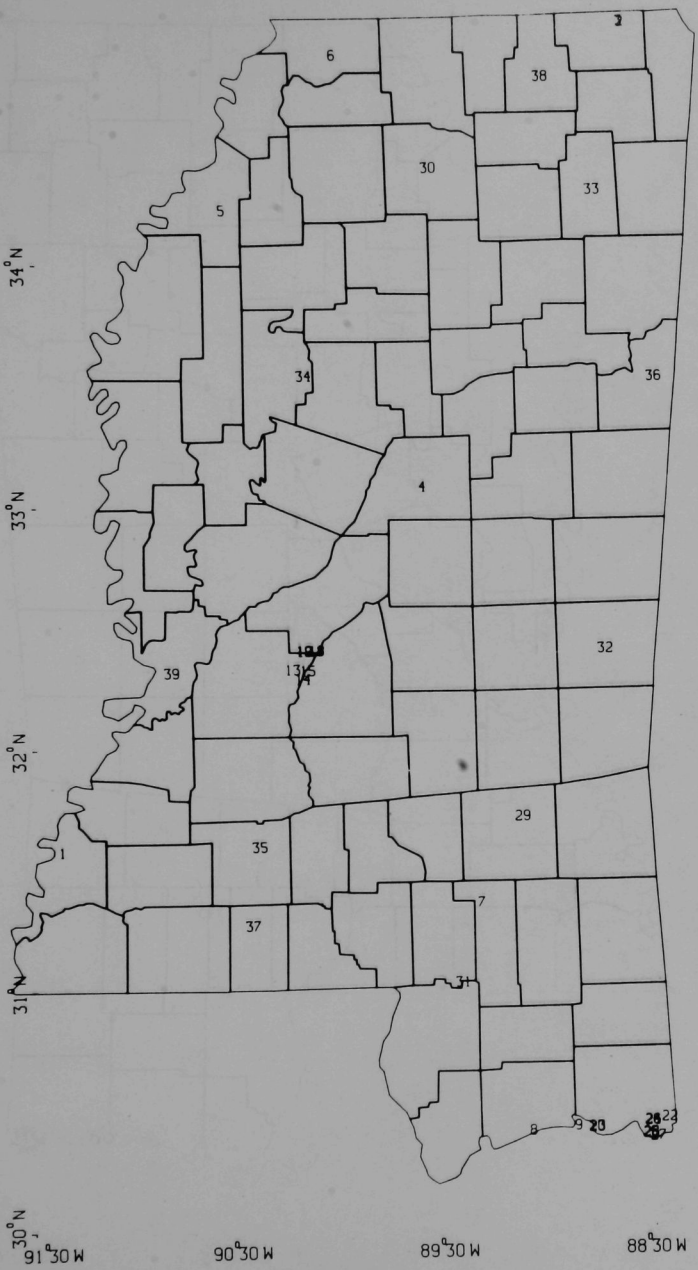


Fig. IV.60. Mississippi: Locations of SAROAD Monitors (See Table IV.11 for Monitor Numbers)

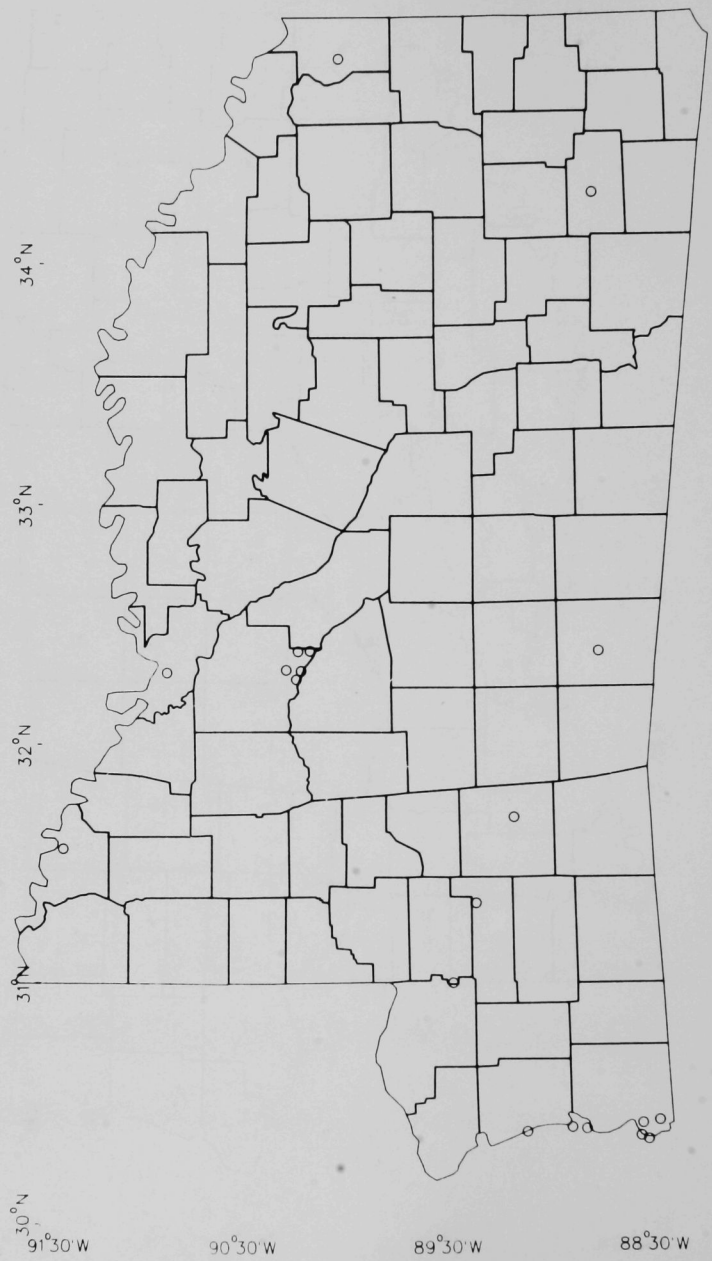


Fig. IV.61. Mississippi: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

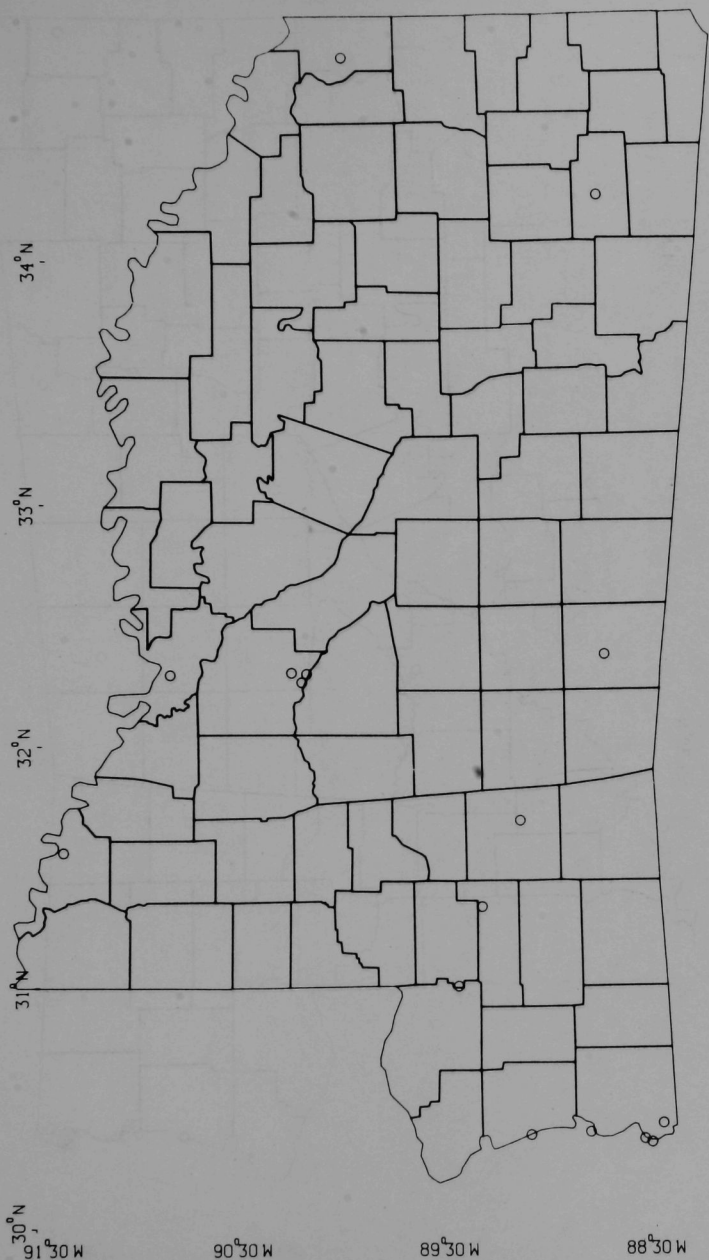


Fig. IV.62. Mississippi: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

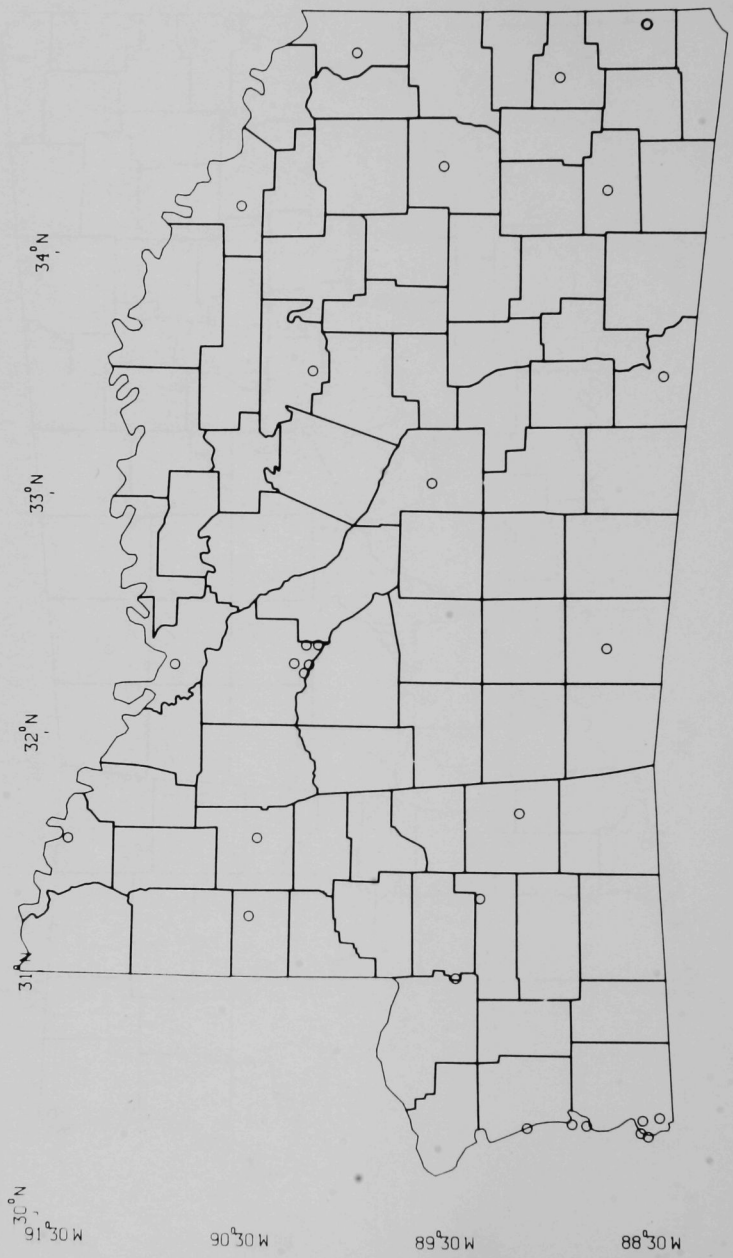


Fig. IV.63. Mississippi: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

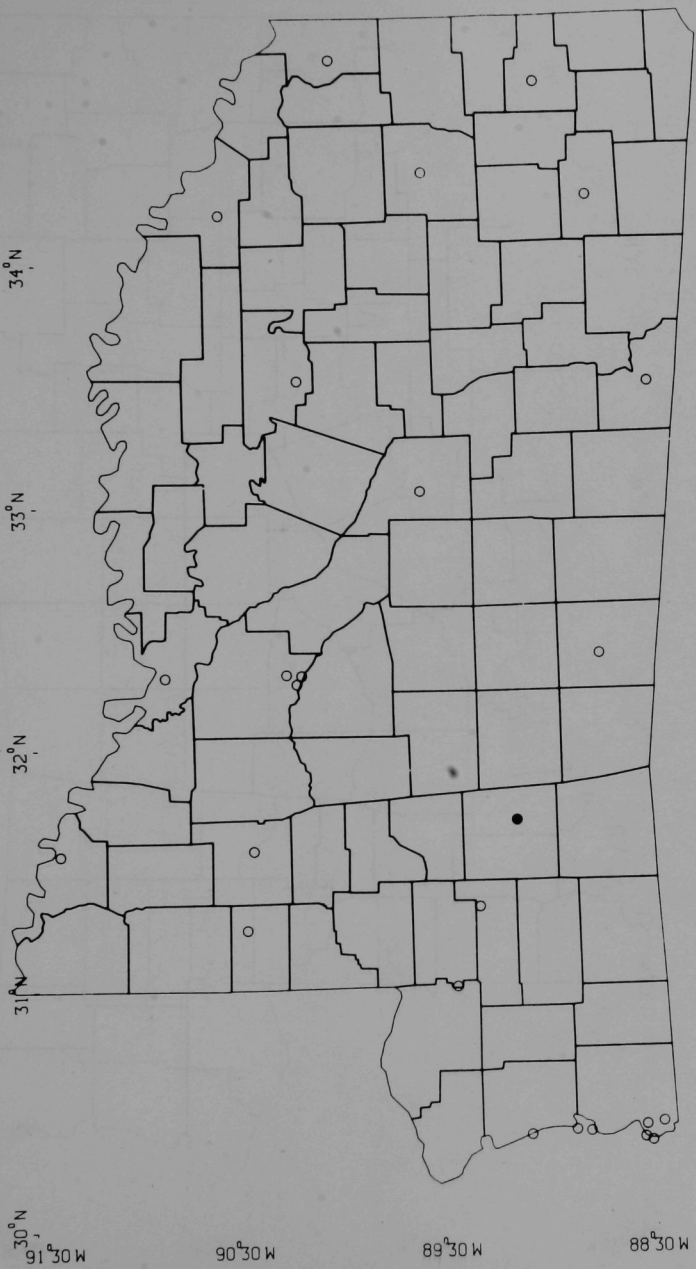


Fig. IV.64. Mississippi: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

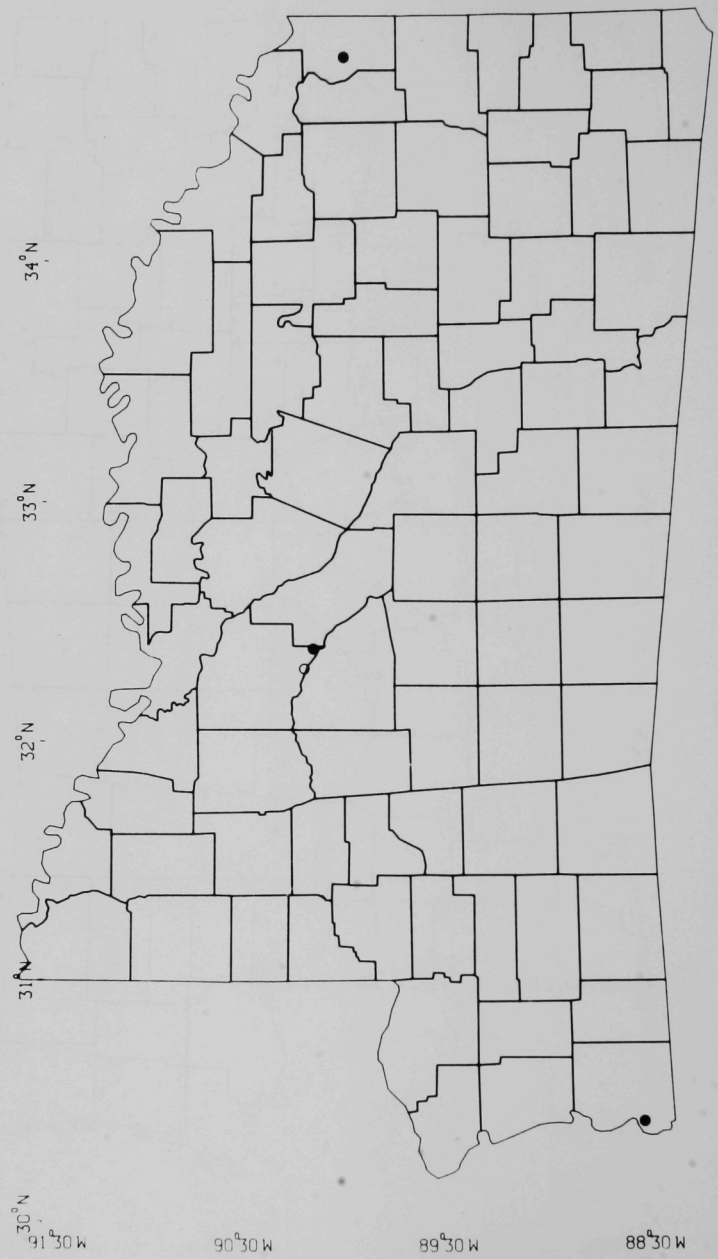


Fig. IV.65. Mississippi: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by [illegible]

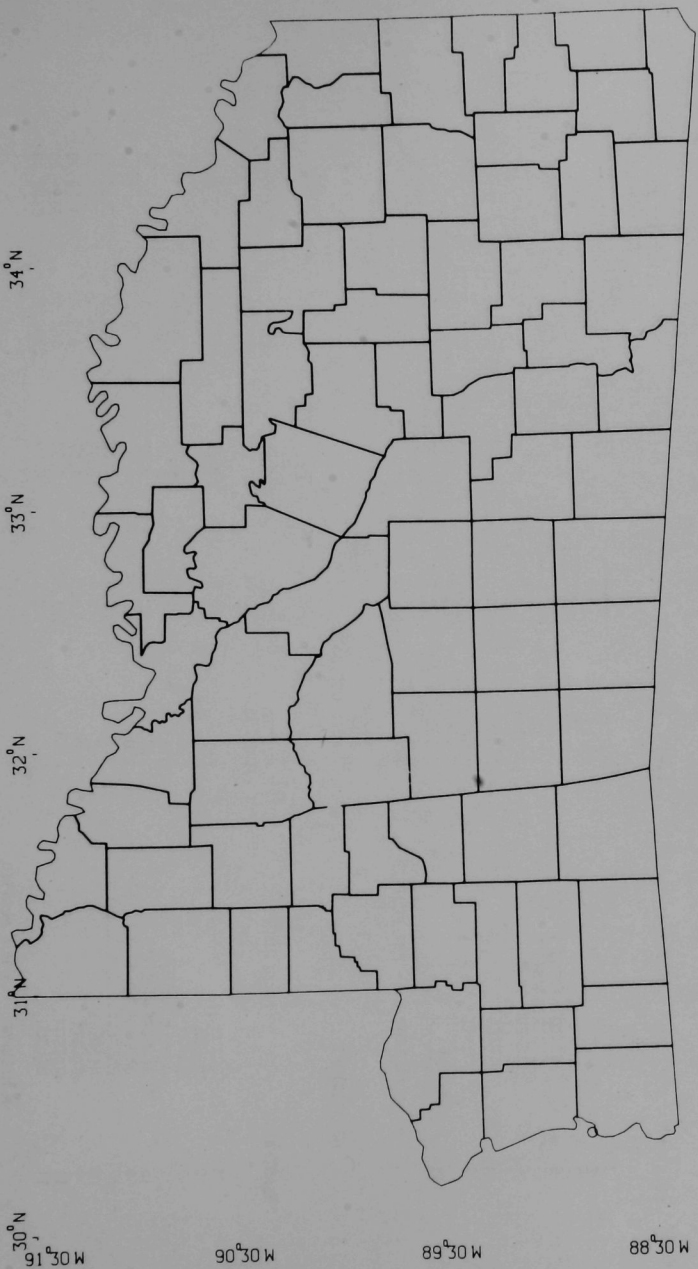


Fig. IV.66. Mississippi: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table IV.12. Mississippi: Power Plant and Fuel Use Data

MISSISSIPPI — POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	BROWN	32.34	90.21	385.20	0.0
2	DELTA	33.39	90.71	220.50	0.0
3	EATON	31.33	89.27	77.03	0.0
4	GERALD ANDRUS	33.28	90.95	731.47	0.0
5	HENDERSON STA	33.83	90.51	51.50	0.0
6	JACKSON CO 1	30.53	88.84	7.50	0.0
7	MOBELLE	31.53	87.31	177.00	0.0
8	NATCHEZ	31.69	91.35	66.00	0.0
9	SNEATT	32.29	89.79	138.25	0.0
10	WATSON	30.44	89.03	1215.75	0.0
11	WILSON	32.32	90.89	1327.60	0.0

N NUCLEAR * NOT PLOTTED

MISSISSIPPI — FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	BROWN	0.0	0.0	2.33	356.01	9332.54
2	DELTA	0.0	0.0	2.51	727.16	9.56
3	EATON	0.0	0.0	2.00	188.00	1.75
4	GERALD ANDRUS	0.0	0.0	2.05	3431.20	0.0
5	HENDERSON STA	2.85	38.24	0.0	0.0	893.10
6	JACKSON CO 1	0.0	0.0	0.0	0.0	0.0
7	MOBELLE	0.0	0.0	2.32	590.30	2661.10
8	NATCHEZ	0.0	0.0	2.52	183.35	320.59
9	SNEATT	0.0	0.0	1.97	391.06	1225.70
10	WATSON	2.83	1371.50	0.50	860.10	3384.10
11	WILSON	0.0	0.0	2.09	2380.10	8182.80

N NUCLEAR * NOT PLOTTED

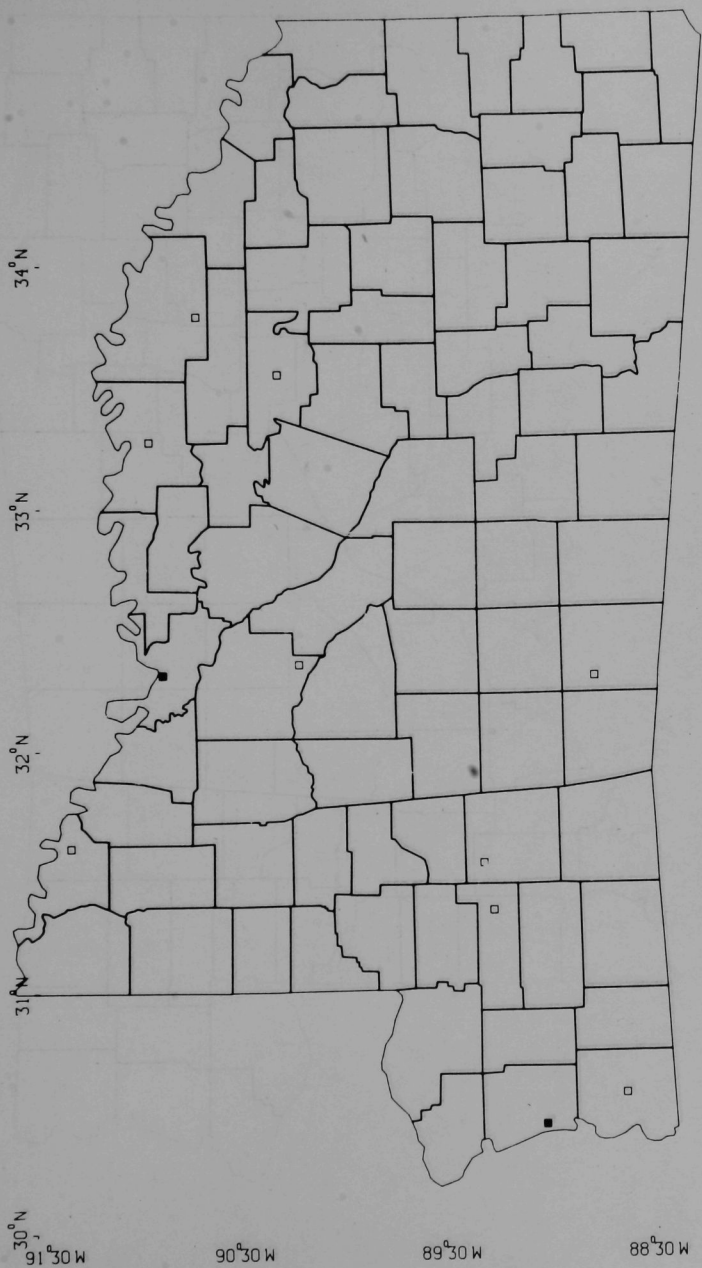


Fig. IV.67. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open <1000 MW. Triangle = Nuclear)

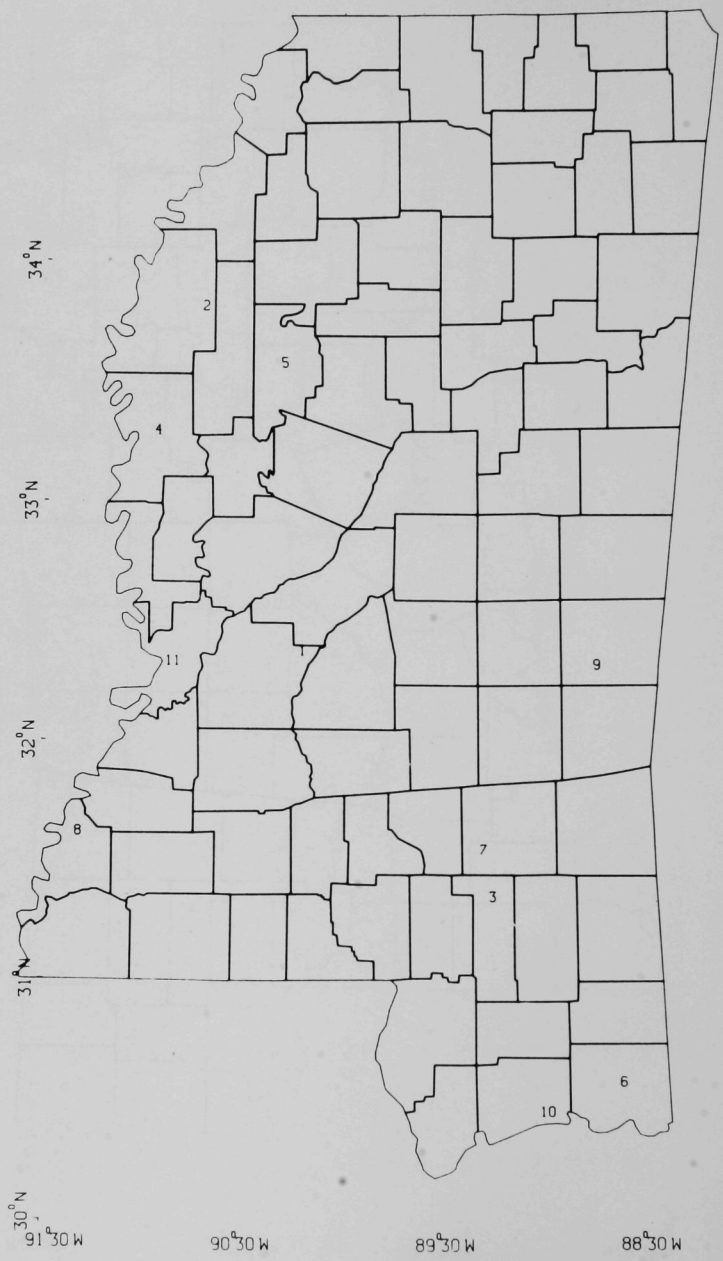


Fig. IV.68. Power Plant Key (See Table IV.12 for Identification and Fuel Use Data)

Fig. IV.69. Mississippi: Key to Counties

REGION IV: NORTH CAROLINA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	127	0
	1 yr			92	0
TSP	24 hr	1	0	142	0
	1 yr			122	0
NO_x	1 yr	0[b]	-	88	0
CO	8 hr	1	-	1	1
O_x	1 hr	1	-	3	2

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	14
Nuclear	2
Total	16

NORTH CAROLINA: Final SIP, 6/79

I. SOURCES OF THE PROBLEM

North Carolina has few nonattainment problems at present. The Spruce Pine area (in portions of Mitchells, Avery, and Yancey counties) was designated as in nonattainment of particulate standards in 1978. Mecklenburg county (Charlotte) is in nonattainment for ozone and carbon monoxide. Fugitive emissions from feldspar mines and reentrainment of that dust by vehicles have been identified as the causes of the TSP standard violations. Of the hydrocarbon precursors to ozone emitted in Charlotte, 55% came from motor vehicles, 20% from petroleum marketing, 7% from surface coating operations, 7% from paper and film coating, and the remainder from miscellaneous small stationary VOC (volatile organic compound) emitters. Approximately 90% of carbon monoxide concentrations are linked to motor vehicle emissions in Mecklenberg County. There are no sulfur dioxide or nitrogen oxide nonattainment areas in North Carolina.

II. ATTAINMENT STRATEGIES

A. TSP

1. Limiting fugitive emissions from feldspar mines
2. Lower speeds for vehicles to reduce reentrainment

B. OZONE

1. Federal Motor Vehicle Emissions Control Program
2. RACT regulations for:
   a. Petroleum/gasoline storage and marketing
   b. Surface coating
   c. Paper and film coating
   d. Tire manufacturing
   e. Furniture finishing
   f. Drum painting
3. Should attain standard by December 31, 1982

C. CARBON MONOXIDE (BY 1987)

1. FMVECP
2. Inspection and maintenance of vehicles
3. Transportation control measures:

   a. Improved public transit, including limited free-fare areas
   b. Areawide carpooling
   c. Pedestrian malls
   d. Traffic flow improvements

III. NEW SOURCE REVIEW

North Carolina will use a growth allowance, allocated on a first-come, first-served basis, for small new sources of VOC in Mecklenburg county. An emissions offset regulation has been developed as a backup in Mecklenburg and for any new sources in other nonattainment areas.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing sources with fuel input > 250 MM Btu per hr

   a. Current SIP: 2.3 lb SO_2 per MM Btu, statewide
   b. Revised SIP proposes 3.5 lb SO_2 per MM Btu, except for Hagood (Charleston Co.), and Urquhart (Aiken Co.) where limit would still be 2.3 lb per MM Btu

      - the change is not predicted to cause violations

2. New sources: NSPS

B. TSP

1. Existing sources

   a. Fuel input $\leq$ 10 MM Btu per hr: 0.6 lb PM per MM Btu
   b. Fuel input between 10 and 100 MM Btu per hr: 0.33 lb PM per MM Btu
   c. Fuel input between 100 and 1,000 MM Btu per hr: 0.18 lb PM per MM Btu
   d. Fuel input > 10,000 MM Btu per hr: 0.1 lb PM per MM Btu
   e. Interpolate within range for sources of intermediate size

2. New sources: NSPS

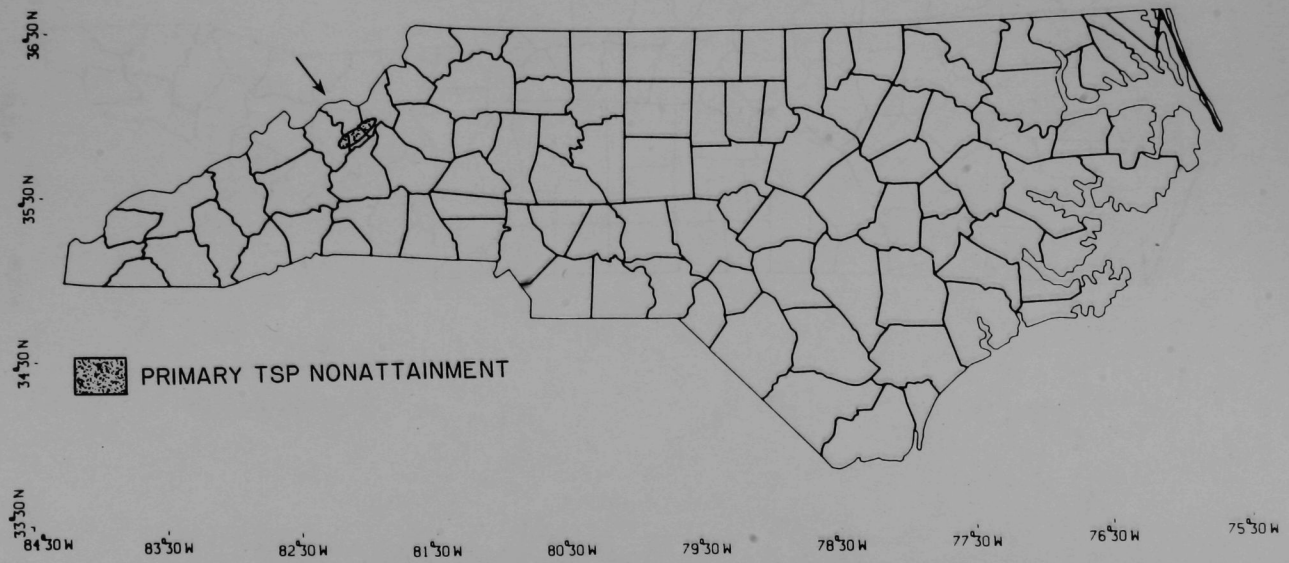


Fig. IV.70. North Carolina: TSP Nonattainment Areas as Designated May 1979

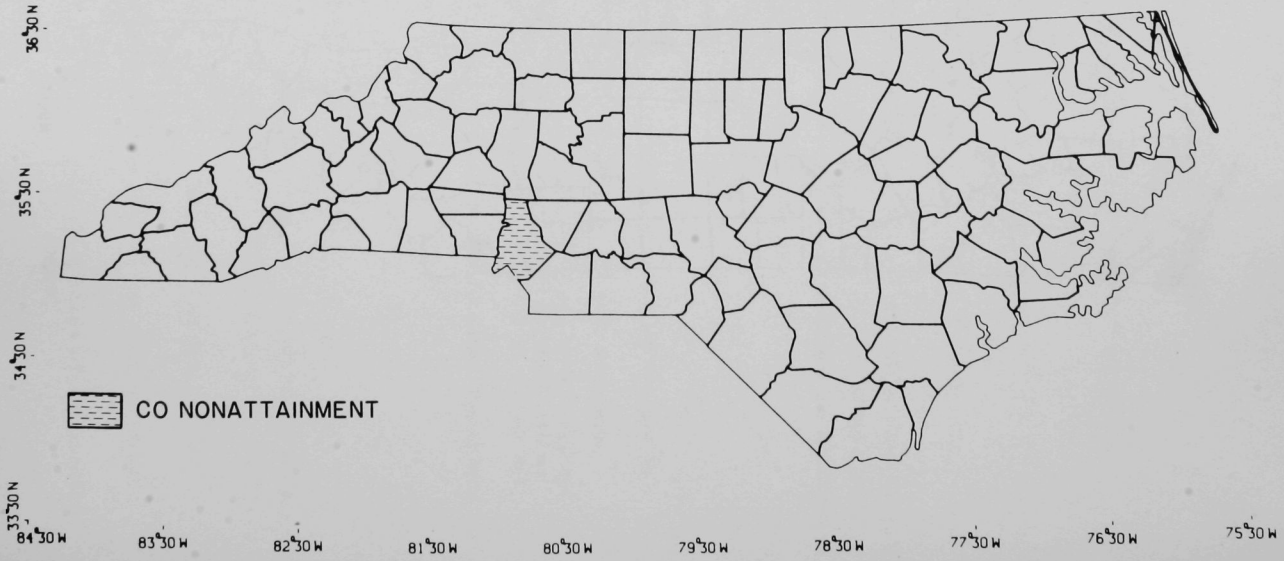


Fig. IV.71. North Carolina: CO Nonattainment Areas as Designated May 1979

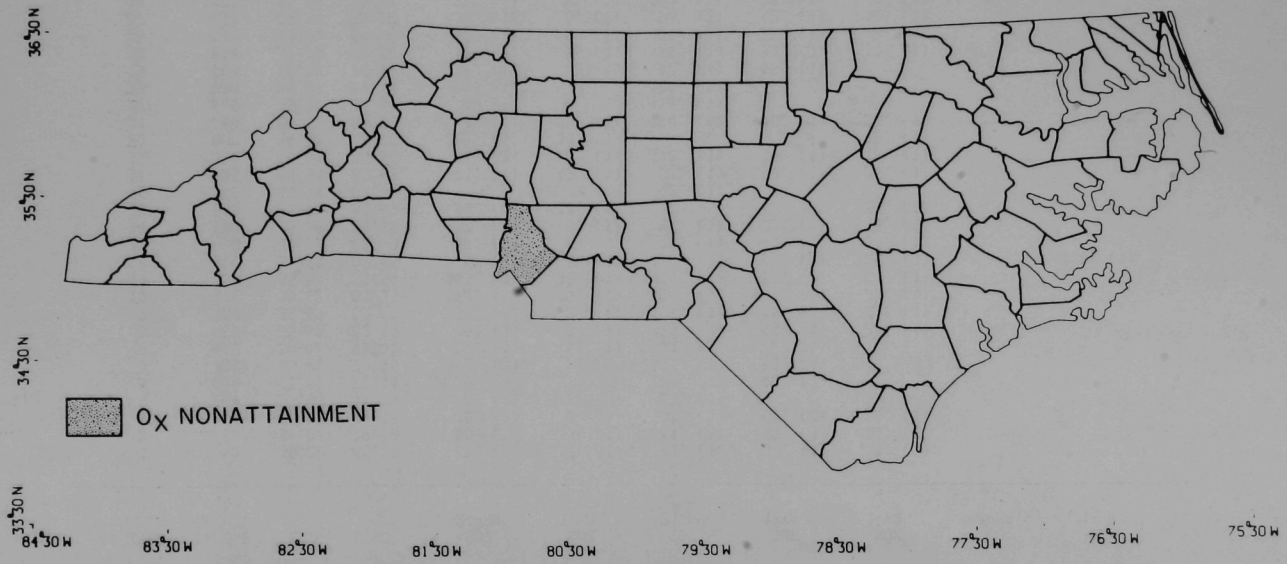


Fig. IV.72. North Carolina: O_X Nonattainment Areas as Designated May 1979

Table IV.13. North Carolina: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	40	35.22	82.78	62. (1)	17. (1)	91. (1)	50. (1)	38. (1)		
2	40	36.07	79.40	50. (1)	13. (1)	84. (1)	42. (1)	36. (1)		
3	80	35.92	81.17	10. (1)	6. (1)	107. (1)	60. (2)	26. (1)		
4	280	35.43	76.74	8. (1)		35. (1)				
5	280	35.54	77.05	29. (1)		87. (1)	40. (1)			
6	320	35.99	76.95	8. (1)		135. (1)	51. (1)			
7	460	34.22	78.04	20. (1)	6. (1)	91. (1)	37. (1)			
8	480	35.48	82.54	5. (1)	8. (1)	120. (1)	44. (1)	28. (1)		
9	430	35.59	82.48	39. (1)	8. (1)	103. (1)	45. (1)	31. (1)		
10	480	35.62	82.55	72. (1)	10. (1)	84. (1)	37. (1)	30. (1)		
11	480	35.57	82.54	163. (1)	15. (1)	114. (1)	53. (2)	41. (1)		
12	480	35.60	82.55	5. (1)	5. (1)	116. (1)	53. (2)	25. (1)		120. (1)
13	480	35.53	82.60	67. (1)	8. (1)	90. (1)	40. (1)	35. (1)		
14	500	35.78	81.61	7. (1)	5. (1)	92. (1)	35. (1)	15. (1)		
15	500	35.70	81.69	50. (1)	13. (1)			34. (1)		
16	500	35.74	82.76			42. (1)				
17	520	35.51	80.62	73. (1)	17. (1)	97. (1)	49. (1)	26. (1)		
18	540	35.88	81.54	14. (1)	6. (1)	103. (1)	54. (1)	18. (1)		
20	600	34.72	76.70	229. (1)	30. (1)			18. (1)		
21	660	35.67	81.22	7. (1)	5. (1)	90. (1)	48. (1)	27. (1)		
22	660	35.74	81.34	8. (1)		156. (1)				
23	720	35.71	79.18	20. (1)		139. (1)				
24	780	36.08	76.59	19. (1)		97. (1)	45. (1)			
25	840	35.26	81.34	12. (1)	7. (1)	78. (1)	34. (1)	11. (1)		
26	840	35.30	81.54	10. (1)	6. (1)	84. (1)	34. (1)			
27	880	34.34	78.22	10. (1)	5. (1)	93. (1)	42. (1)	12. (1)		
28	880	34.34	78.22	27. (1)	8. (1)	102. (1)	37. (1)	13. (1)		
29	940	35.24	77.14	18. (1)		110. (1)				
30	940	35.12	77.09	14. (1)		88. (1)	43. (1)			
31	960	35.09	78.83	30. (1)	10. (1)			45. (1)		
32	960	35.09	78.86	28. (1)	9. (1)	88. (1)	49. (1)	41. (1)		
33	1020	35.85	75.56	22. (1)						
34	1060	35.82	81.26	11. (1)	6. (1)	87. (1)	48. (1)	29. (1)		
35	1060	35.88	80.08	47. (1)	11. (1)	105. (1)	58. (2)	29. (1)		
36	1140	34.74	77.99	17. (1)	7. (1)	101. (1)	45. (1)	19. (1)		
37	1140	34.96	77.97	12. (1)	5. (1)	81. (1)	34. (1)	12. (1)		
39	1180	35.91	78.89	55. (1)	11. (1)	103. (1)	57. (2)			
41	1180	35.99	78.90	35. (1)		120. (1)				
42	1180	35.91	78.89					20. (1)		
43	1300	35.98	77.78	20. (1)	7. (1)	102. (1)	53. (1)	37. (1)		
44	1480	36.08	80.33			102. (1)	43. (1)			
45	1480	36.10	80.24	41. (1)	12. (1)			61. (1)		
46	1480	36.10	80.25	17. (1)		96. (1)	56. (1)			

Table IV.13. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
47	1480	36.10	80.25	45. (1)	10. (1)	126. (1)	67. (2)	57. (1)		
49 *	1480	80.07	78.11	18. (1)	6. (1)	93. (1)	54. (1)	56. (1)		
50	1480	36.02	80.38			135. (1)	62. (2)			
51	1480	36.24	80.31	21. (1)	7. (1)	78. (1)	43. (1)	36. (1)		
52	1480	36.21	80.15	22. (1)	7. (1)	86. (1)	38. (1)	34. (1)		
53	1480	36.02	80.38	18. (1)	7. (1)			53. (1)		
54	1480	36.07	80.29	38. (1)	9. (1)	150. (1)	63. (2)	60. (1)		
55	1480	36.13	80.24	34. (1)	11. (1)	130. (1)	66. (2)	65. (1)		
56	1480	36.10	80.24			117. (1)	58. (2)			
57	1480	36.10	80.24	65. (1)	13. (1)	149. (1)	72. (2)	55. (1)		
58	1480	36.08	80.33	37. (1)	8. (1)			56. (1)		
59	1560	35.29	81.00	14. (1)		89. (1)	44. (1)			
60	1560	35.25	81.04	6. (1)		148. (1)	58. (2)			
62	1560	35.32	81.21			90. (1)	38. (1)			
63	1560	35.31	81.17	5. (1)		112. (1)	43. (1)			
64	1560	35.32	81.21	5. (1)						
66	1560	35.24	81.03			79. (1)	40. (1)			
67	1560	35.38	81.37	5. (1)		137. (1)	49. (1)			
68	1560	35.26	81.21			131. (1)	63. (2)			
69	1560	35.25	81.18			82. (1)				
70	1560	35.26	81.21	20. (1)						
71	1560	35.30	81.00	10. (1)		109. (1)	43. (1)			
73	1780	36.03	79.91			148. (1)	49. (1)			
74	1780	36.03	79.79	25. (1)		48. (1)				
76	1780	36.03	79.80	27. (1)	11. (1)	122. (1)	53. (2)	36. (1)		
77	1780	36.06	79.78			178. (1)				
78 *	1780	0.0	0.0	34. (1)		98. (1)				
79	1780	35.96	80.01	26. (1)	11. (1)	149. (1)	66. (2)	40. (1)		
80	1780	35.94	80.04			117. (1)				
81	1800	36.48	77.65	48. (1)	9. (1)	132. (1)	54. (1)	26. (1)		
82	1840	35.31	78.50	22. (1)	7. (1)	104. (1)	55. (1)	33. (1)		
83	1860	35.53	82.85	164. (1)	23. (1)	216. (2)	73. (2)	45. (1)		
84	1860	35.49	82.99	70. (1)	14. (1)	106. (1)	47. (1)	25. (1)		
85	1860	35.48	83.00			102. (1)	52. (1)			
86	1860	35.53	82.92			85. (1)	38. (1)			
87	1860	35.48	83.00	28. (1)	7. (1)			27. (1)		
88	1900	35.30	82.44	5. (1)	5. (1)	85. (1)	45. (1)	11. (1)		
89	1900	35.32	82.46			93. (1)	51. (1)			
90	1940	36.40	76.93			129. (1)	43. (1)			
91	1940	36.38	76.89	6. (1)		61. (1)				
92	1940	36.40	76.93	7. (1)						
93	1940	36.29	76.99	17. (1)		131. (1)				
94	2060	35.71	80.88	65. (1)	14. (1)	108. (1)	47. (1)	18. (1)		

Table IV.13. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
95	2060	35.76	80.89	42. (1)	11. (1)	117. (1)	50. (1)	30. (1)		
96	2060	35.59	80.81	9. (1)		80. (1)	47. (1)			
97	2080	35.38	83.22	5. (1)		60. (1)				
98	2080	35.38	83.23			104. (1)				
99	2120	35.50	78.34	24. (1)	8. (1)	140. (1)	47. (1)	21. (1)		
100	2280	35.48	79.13	24. (1)	7. (1)	90. (1)	41. (1)	30. (1)		
101	2320	35.27	77.61	7. (1)		99. (1)	43. (1)			
102	2360	35.49	81.25			79. (1)	40. (1)			
103	2360	35.47	81.26	29. (1)	8. (1)	85. (1)	50. (1)	21. (1)		
104	2360	35.49	81.25	16. (1)	6. (1)			16. (1)		
105	2430	35.69	82.01	5. (1)	5. (1)	88. (1)	47. (1)	13. (1)		
106	2430	35.64	82.18	5. (1)	5. (1)	85. (1)	46. (1)	11. (1)		
107	2580	35.18	80.65	22. (1)	7. (1)	81. (1)	38. (1)	20. (1)		
108	2580	35.22	80.25	34. (1)	11. (1)	100. (1)	47. (1)			
110	2580	35.28	80.94	138. (1)	43. (1)					
111	2580	35.25	80.83	55. (1)		106. (1)				
112	2580	35.30	80.81							252. (4)
113	2580	35.07	80.87			58. (1)	29. (1)			
114	2580	35.19	80.84	23. (1)	9. (1)	91. (1)	42. (1)	37. (1)		320. (4)
115	2580	35.23	80.83			102. (1)	53. (1)			
116	2580	35.29	81.00	45. (1)	9. (1)	76. (1)	35. (1)	20. (1)		
117	2580	35.30	80.75	26. (1)	8. (1)	81. (1)	37. (1)	35. (1)		
118	2580	35.25	80.85	41. (1)	10. (1)			56. (1)		
119	2580	35.18	80.80	27. (1)	8. (1)	73. (1)	39. (1)	52. (1)		
120	2580	35.25	80.82			98. (1)	52. (1)			
121	2580	35.23	80.85			111. (1)	52. (1)			
122	2580	35.23	80.83	31. (1)	12. (1)	81. (1)	39. (1)	49. (1)		
123	2580	35.22	80.25					46. (1)		
124	2580	35.50	80.90			72. (1)	29. (1)			
125	2580	35.50	80.85	38. (1)	10. (1)	101. (1)	37. (1)	29. (1)		
126	2580	35.24	80.78						17. (4)	
127	2580	35.10	80.90	24. (1)	9. (1)	96. (1)	39. (1)			
128	2580	35.22	80.78	42. (1)		98. (1)				
130	2620	35.91	82.07			79. (1)	35. (1)			
131	2620	35.91	82.07	8. (1)		103. (1)				
132	2680	35.18	79.37	24. (1)	7. (1)	69. (1)	31. (1)	25. (1)		
133	2680	35.35	79.42			56. (1)	26. (1)			
134	2880	34.26	77.95	26. (1)	7. (1)	149. (1)	47. (1)			
135	2880	34.32	77.95	21. (1)	7. (1)	92. (1)	46. (1)	21. (1)		
136	2880	34.26	77.95					18. (1)		
137	2980	35.75	77.40	15. (1)	6. (1)	112. (1)	43. (1)	11. (1)		
138	2980	34.75	77.43			122. (1)	56. (1)			
139	3000	35.75	79.02	34. (1)	7. (1)	69. (1)	35. (1)	23. (1)		
140	3080	36.31	76.23	20. (1)		101. (1)	44. (1)			

Table IV.13. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
141	3140	36.41	79.04	23. (1)	8. (1)	84. (1)	33. (1)	14. (1)		
142	3180	35.61	77.37	18. (1)		141. (1)	45. (1)			
143	3180	35.58	77.60	20. (1)		96. (1)	44. (1)			
144	3260	35.70	79.82	50. (1)	10. (1)	121. (1)	53. (1)	22. (1)		
145	3320	34.94	79.77	42. (1)	9. (1)	75. (1)	40. (1)	26. (1)		
146	3380	34.62	79.01	22. (1)	7. (1)	86. (1)	47. (1)	33. (1)		
147	3420	36.37	79.67	25. (1)	6. (1)	79. (1)	45. (1)	28. (1)		
148	3420	36.51	79.77	21. (1)	8. (1)	106. (1)	53. (1)	28. (1)		
149	3460	35.68	80.44	18. (1)	7. (1)	95. (1)	49. (1)	38. (1)		
150	3460	35.66	80.47	40. (1)	9. (1)	93. (1)	54. (1)	39. (1)		
151	3500	35.36	81.93			60. (1)				
152	3500	35.37	81.96			83. (1)	46. (1)			
153	3500	35.33	81.87	5. (1)	5. (1)	118. (1)	50. (1)	10. (1)		
154	3600	34.78	79.46	37. (1)	9. (1)	89. (1)	43. (1)	22. (1)		
155	3900	35.35	80.20	29. (1)	10. (1)	83. (1)	43. (1)	25. (1)		
156 *	3960	80.61	78.49	49. (1)	12. (1)	94. (1)	53. (1)	24. (1)		
157	3980	35.43	83.45	5. (1)	5. (1)	88. (1)	42. (1)	12. (1)		
158	4040	35.22	82.78	5. (1)	5. (1)	78. (1)	29. (1)	10. (1)		
159	4080	34.98	80.52	24. (1)		87. (1)	46. (1)			
160	4120	36.35	78.41	18. (1)	7. (1)	97. (1)	36. (1)	17. (1)		
161	4160	35.79	78.64	39. (1)	11. (1)	107. (1)	48. (1)	48. (1)		
162	4160	35.84	78.64	33. (1)	10. (1)	82. (1)	39. (1)	44. (1)		
163	4160	35.79	78.63	36. (1)	12. (1)	124. (1)	51. (1)	49. (1)		
164	4240	35.86	76.76	5. (1)		83. (1)	44. (1)			
165	4260	36.21	81.68	5. (1)	5. (1)	84. (1)	42. (1)	10. (1)		
166	4280	35.39	77.99	24. (1)		128. (1)	61. (2)			
167	4360	36.17	81.15			81. (1)	34. (1)			
168	4360	36.15	81.16	5. (1)	5. (1)	73. (1)	44. (1)	10. (1)		
169	4440	35.69	77.86	18. (1)	7. (1)	159. (1)	61. (2)	27. (1)		
170	4500	35.92	82.30	8. (1)	5. (1)	67. (1)	32. (1)	11. (1)		
171	4500	35.91	82.21			83. (1)				

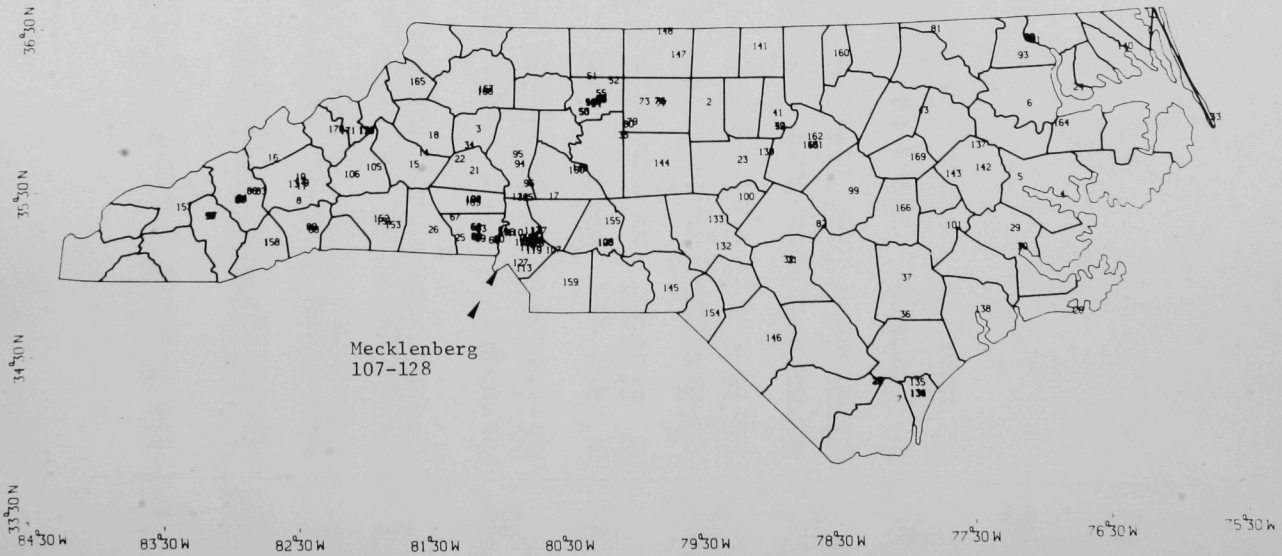


Fig. IV.73. North Carolina: Locations of SAROAD Monitors (See Table IV.13 for Monitor Numbers)

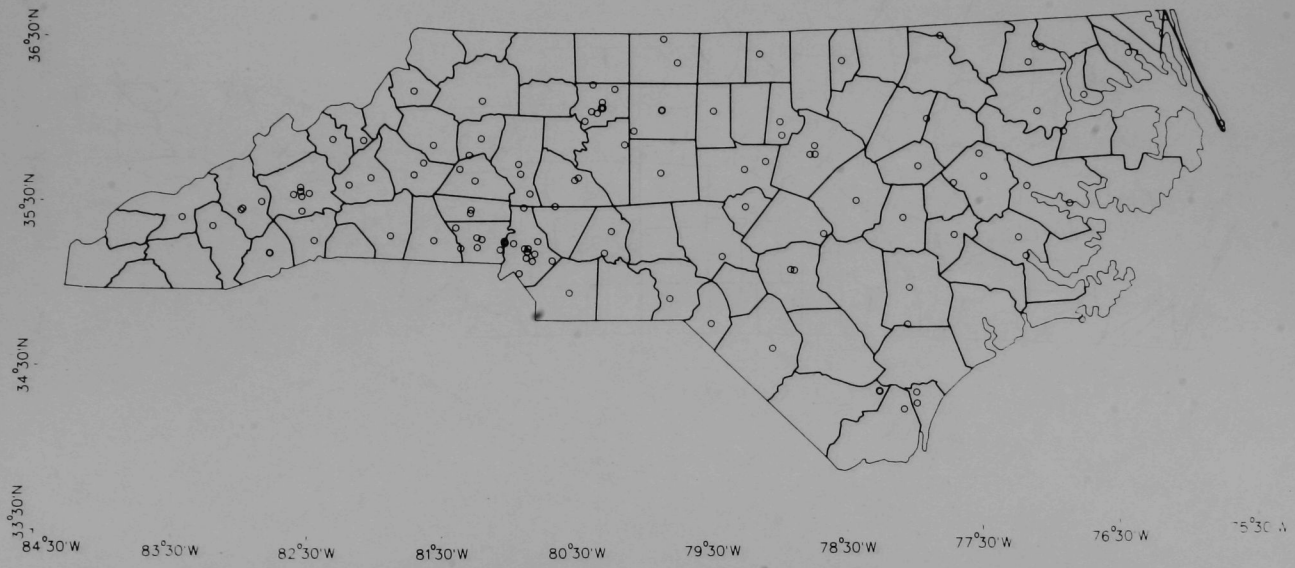


Fig. IV.74. North Carolina: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

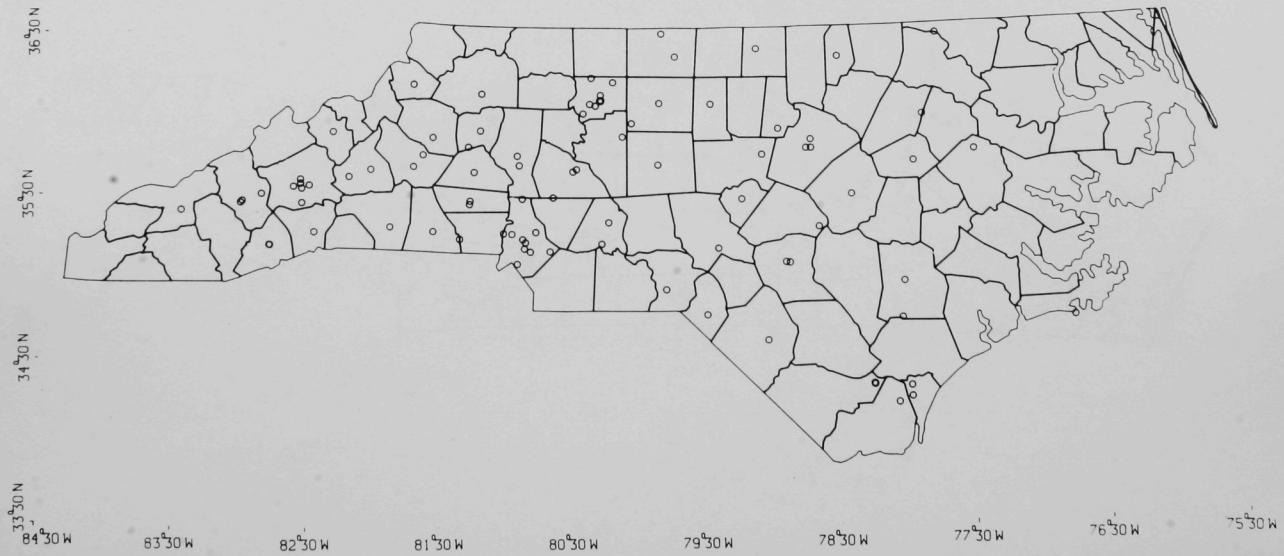


Fig. IV.75. North Carolina: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

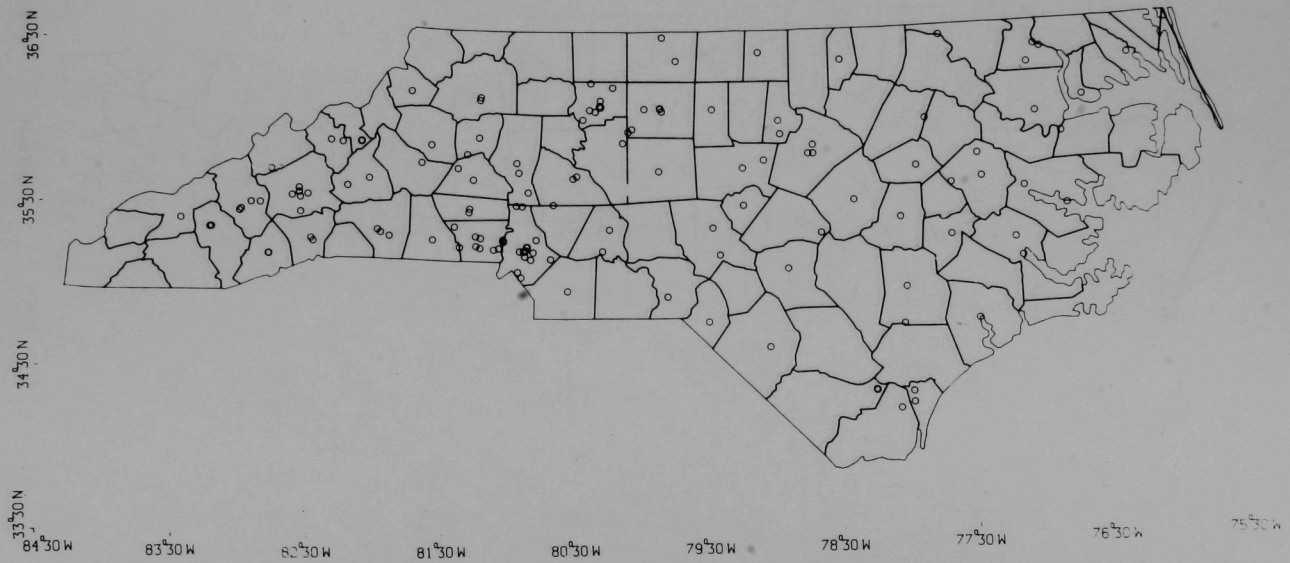


Fig. IV.76. North Carolina: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

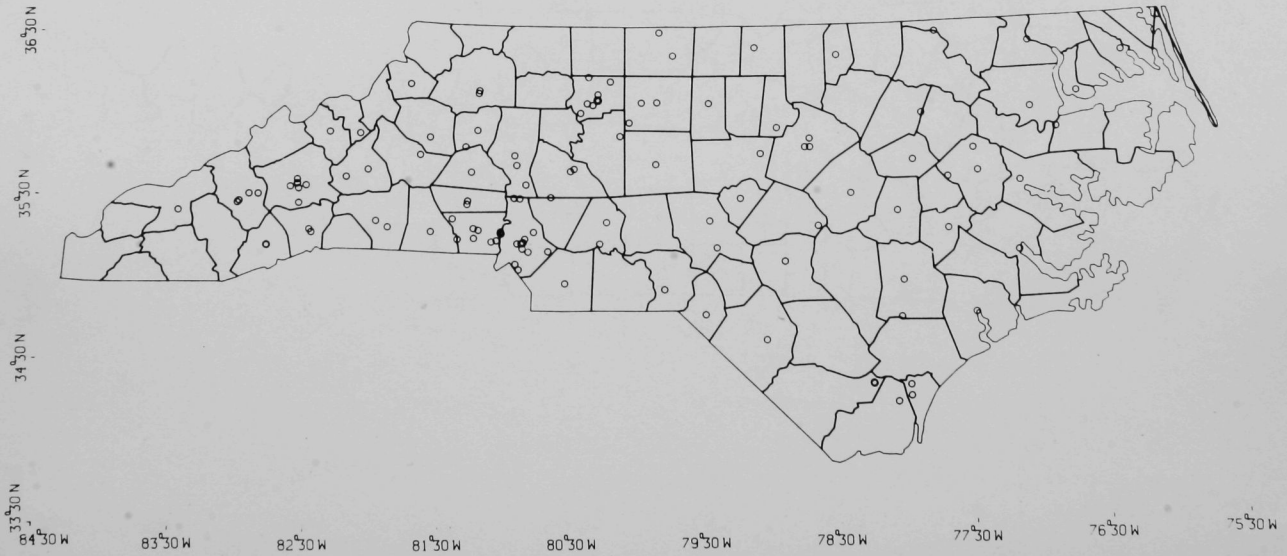


Fig. IV.77. North Carolina: Monitors Reporting Adequate Data on Annual Average TSP; No Violations

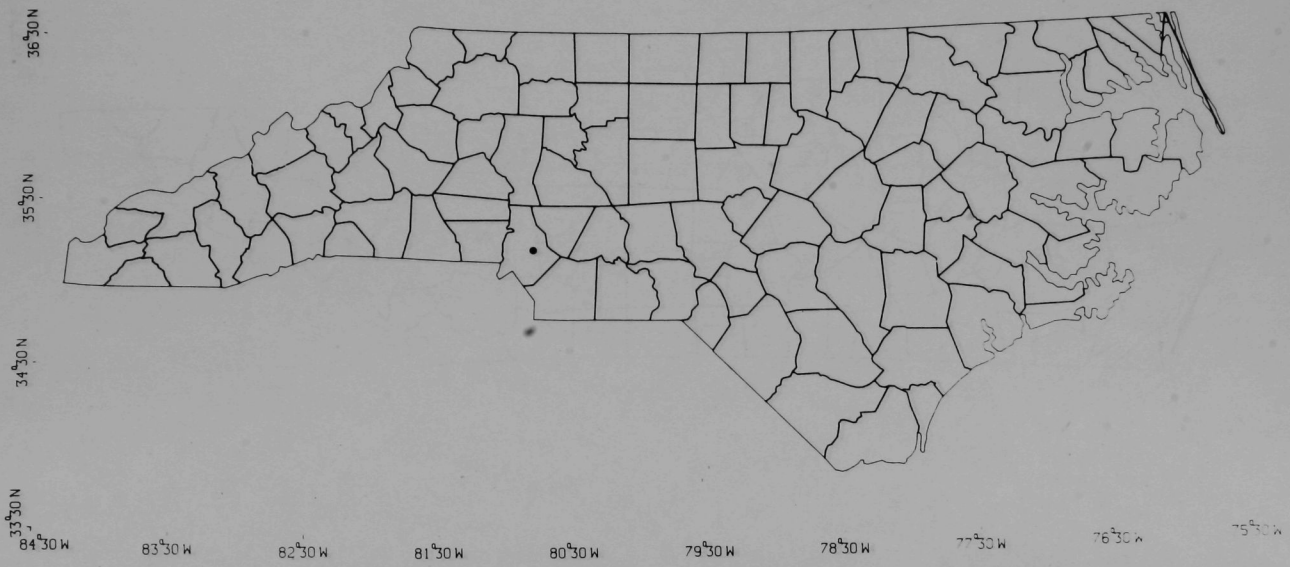


Fig. IV.78. North Carolina: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

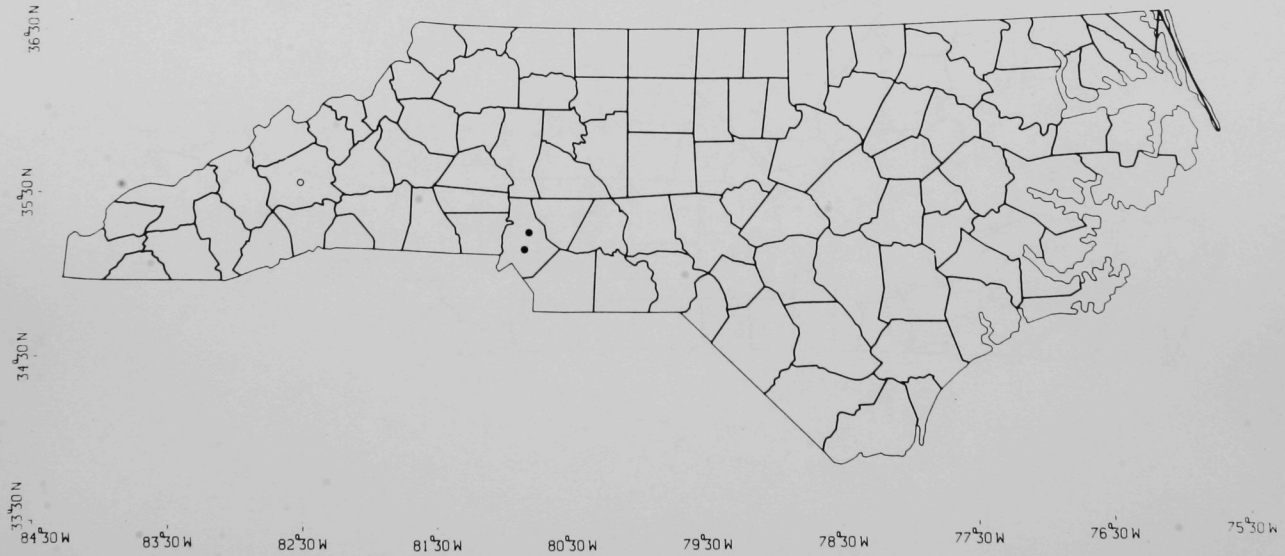


Fig. IV.79. North Carolina: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

Fig. IV.80. North Carolina: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table IV.14. North Carolina: Power Plant and Fuel Use Data

NORTH CAROLINA — POWER PLANT DATA

PLANT #		PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1		ALLEN	35.19	81.01	1155.00	0.0
2		ASHEVILLE	35.47	82.54	413.64	0.0
3		BELEWS CREEK 1&2	36.28	80.06	2160.00	0.0
4	N	BRUNSWICK STEAM	34.03	78.24	783.00	0.0
5		BUCK	35.71	80.53	553.00	0.0
6		CAPE FEAR	35.52	79.05	[illegible]	0.0
7		CLIFFSIDE	35.02	81.76	770.00	0.0
8		DAN RIVER	36.49	79.72	290.00	0.0
9		LEE	35.33	78.09	402.45	0.0
10		MARSHALL	35.80	80.96	2813.00	0.0
11		MCGUIRE	35.45	80.84	45.00	0.0
12	N	PERKINS (NUCL)	35.93	80.54	2661.00	0.0
13		RIVERBEND	35.33	80.97	751.00	0.0
14		ROXBORO	36.43	79.07	1813.05	0.0
15		SUTTON	34.28	77.99	671.62	671.60
* 16		WEATHERSPOON	34.59	78.97	165.50	0.0

N NUCLEAR * NOT PLOTTED

NORTH CAROLINA — FUEL-USE DATA

PLANT #		PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1		ALLEN	1.06	1790.53	0.20	28.31	0.0
2		ASHEVILLE	1.18	989.75	0.15	12.79	0.0
3		BELEWS CREEK 1&2	1.01	2125.50	0.23	75.03	0.0
4	N	BRUNSWICK STEAM	0.0	0.0	0.0	0.0	0.0
5		BUCK	0.95	484.51	0.20	24.76	0.0
6		CAPE FEAR	1.20	734.23	0.15	11.46	0.0
7		CLIFFSIDE	1.25	1336.80	0.10	19.35	0.0
8		DAN RIVER	0.94	331.94	0.20	11.49	0.0
9		LEE	1.50	659.80	0.15	13.70	16.52
10		MARSHALL	1.10	6100.69	0.20	27.03	0.0
11		MCGUIRE	0.0	0.0	0.0	0.0	0.0
12	N	PERKINS (NUCL)	0.0	0.0	0.0	0.0	0.0
13		RIVERBEND	1.22	506.83	0.20	17.75	0.0
14		ROXBORO	1.07	4023.50	0.15	46.70	0.0
15		SUTTON	1.56	543.90	2.10	23.92	0.0
16		WEATHERSPOON	1.80	217.55	0.15	10.02	0.0

N NUCLEAR * NOT PLOTTED

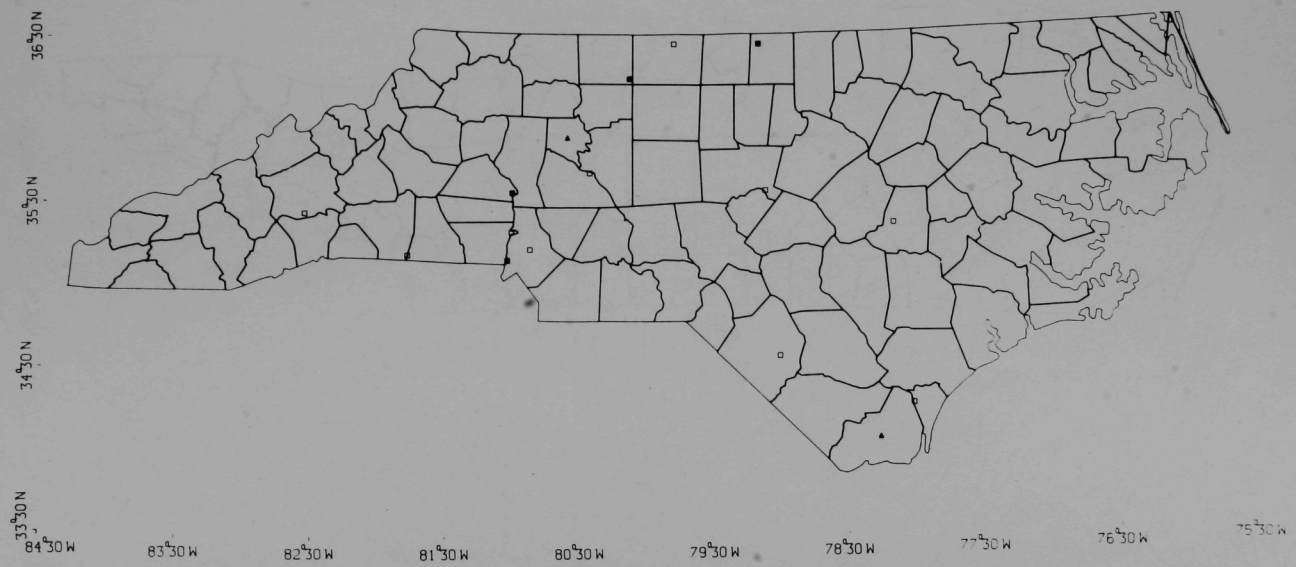


Fig. IV.81. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000, MW; Open, <1000 MW. Triangle = Nuclear)

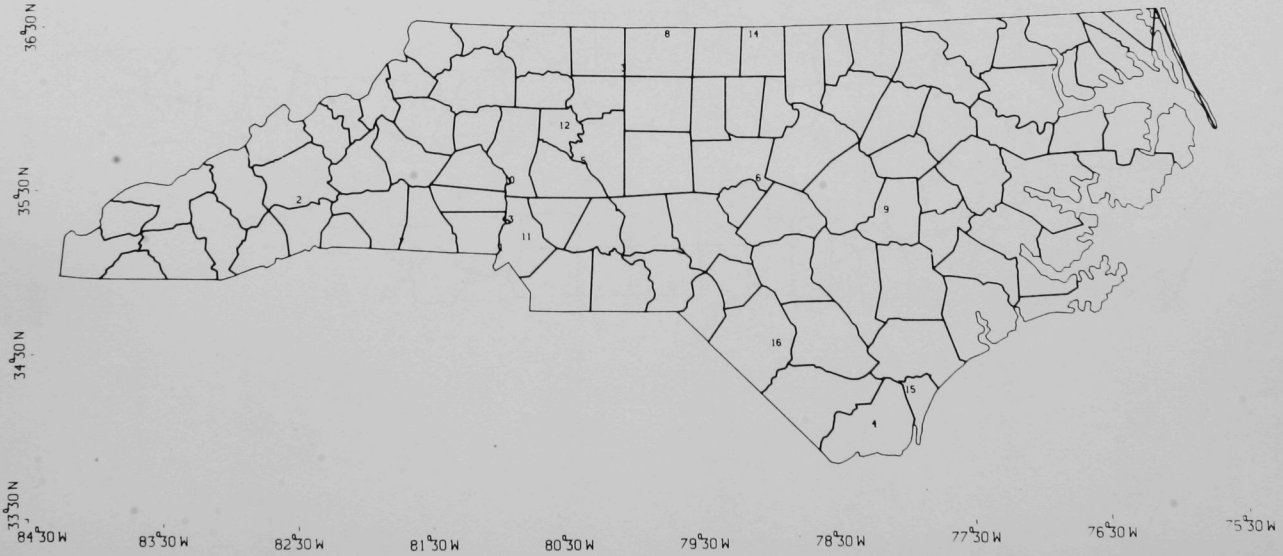


Fig. IV.82. Power Plant Key (See Table IV.14 for Identification and Fuel Use Data)

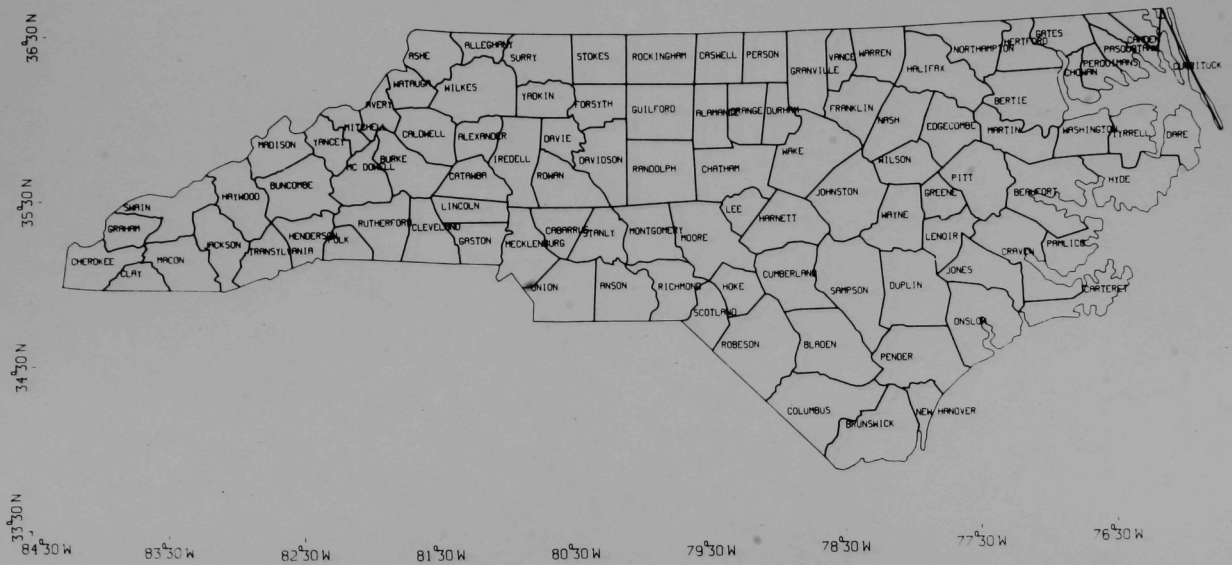


Fig. IV.83. North Carolina: Key to Counties

REGION IV: SOUTH CAROLINA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	53	0
	1 yr			48	0
TSP	24 hr	2	0	74	2
	1 yr			70	2
NO_x	1 yr	0[b]	-	47	0
CO	8 hr	2	-	3	1
O_x	1 hr	3	-	3	2

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	14
Nuclear	1
Total	15

SOUTH CAROLINA
(Official SIP, 1/79)

I. SOURCES OF THE PROBLEM

South Carolina designated two areas as in nonattainment for the primary TSP standard: a small area in Charleston (Charleston Co.) and one in Georgetown (Georgetown County). In addition, a small area around the Port Authority in Charleston was designated as in nonattainment for the secondary TSP standard as a result of fugitive emissions from grain elevators and warehouses. The primary violations in Charleston are the result of fugitive process emissions from the Airco Alloys plant, with contributions from resuspended road dust. In Georgetown, particulate emissions result equally from resuspended road dust and the Georgetown Steel complex (fugitive emissions).

Two areas, Columbia (Richland Co.) and Rock Hill (York Co.) are designated as in nonattainment for CO because of mobile source emissions. Rock Hill has been redesignated as unclassified on account of a judgment that the original monitoring data were incorrect. Five counties surrounding three major cities are in nonattainment for O_x: Charleston and Berkeley counties (Charleston), Richland and Lexington (Columbia), and York (Rock Hill). York Co. is a rural area, with O_x possibly the result of transport from its North Carolina neighbor, Charlotte. In Columbia and Charleston, emissions from mobile sources make up about half of the hydrocarbon precursors to ozone, stationary VOC emitters contribute a third in Columbia and a fifth in Charleston, whereas area sources account for the remainder.

II. ATTAINMENT STRATEGIES

A. TSP

1. Georgetown

a. Primary standard has been achieved

- no violations recorded in the last three years
- fugitive process emissions have been reduced

b. State requests an 18-month extension of the deadline for a plan to meet the secondary standard

- may need RACT controls on industrial fugitive emissions
- some controls on road emissions will be required

2. Charleston

   a. Primary violation area

      - reduction of fugitive emissions from Airco Alloys
      - RACT already required on Westvaco paper facility boilers and recovery furnaces
      - reduction in the number of emission control malfunctions

   b. Secondary area

      - development of a plan to limit resuspended road dust

B. CO

1. Rock Hill

   a. Area to be unclassified

   b. Additional monitoring data to be collected

   c. No further action needed

2. Columbia

   a. FMVECP

   b. Attainment projected by end of 1982

C. O_x

1. Charleston & Columbia

   a. FMVECP

   b. Control of VOC from large stationary sources

   c. Attainment predicted by 1982

2. York County

   a. Rural area

   b. No further action needed

III. NEW SOURCE REVIEW

South Carolina will follow an emission offset procedure for new sources in nonattainment areas.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Class I Counties: Charleston

   a. Fuel input $\leq$ 10 MM Btu per hr: 3.5 lb SO_2 per MM Btu

   b. Fuel input > 10 MM Btu per hr: 2.3 lb SO_2 per MM Btu

2. Class II Counties: Aiken and Anderson

   a. Fuel input $\leq$ 1000 MM Btu per hr: 3.5 lb SO_2 per MM Btu

   b. Fuel input > 1000 MM Btu per hr: 2.3 lb SO_2 per MM Btu

3. Class III Counties: All others

   a. All sources: 3.5 lb SO_2 per MM Btu

B. TSP

1. Fuel input $\leq$ 1300 MM Btu per hr: 0.6 lb particulate matter per MM Btu

2. Fuel input > 1300 MM Btu per hr interpolated using $E = 57.84\ P^{-0.637}$ where E = emission rate and P = MM Btu per hr.

3. Exception for existing sources with fuel input $\leq$ 10 MM Btu, constructed before 2/11/71: 0.8 lb PM per MM Btu

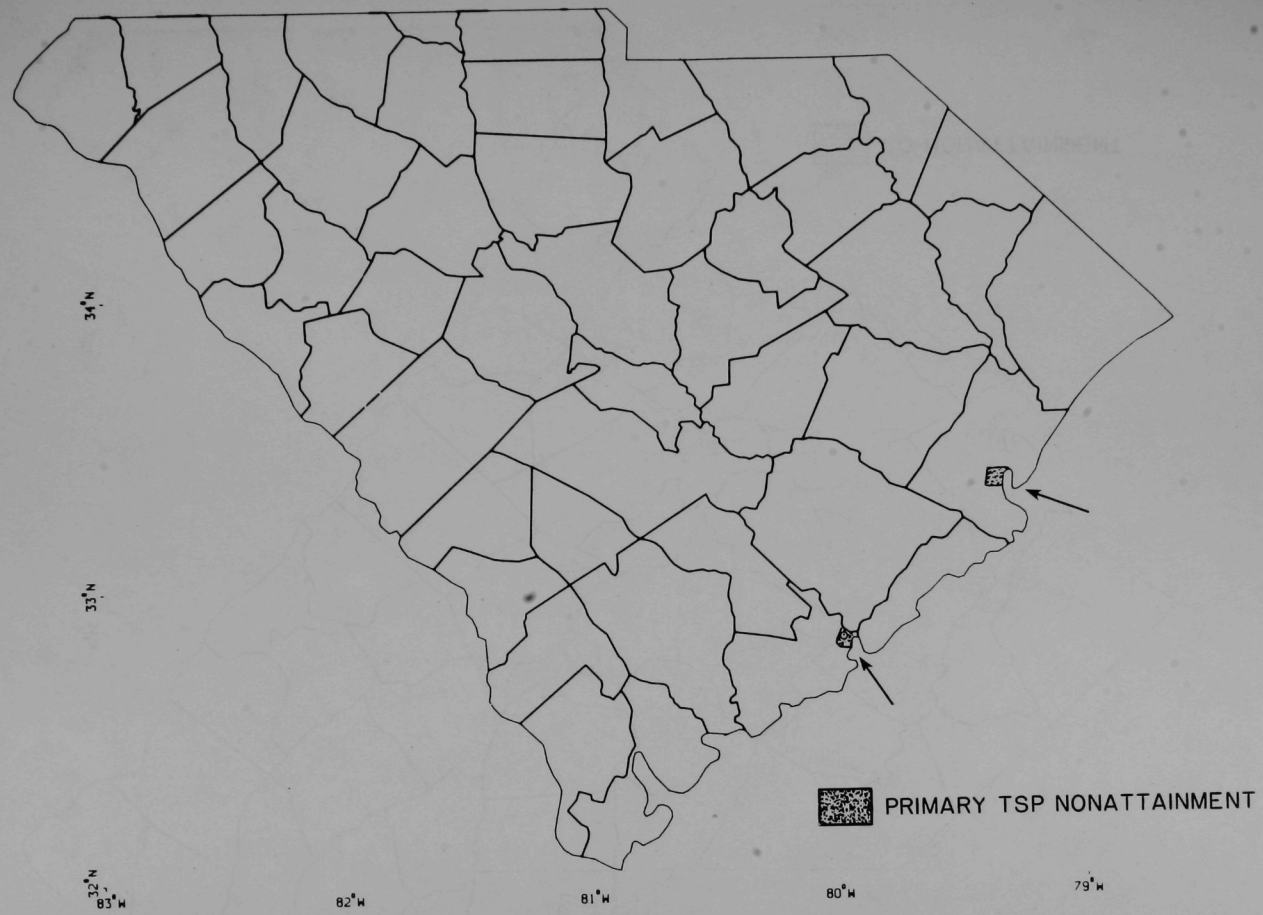


Fig. IV.84. South Carolina: TSP Nonattainment Areas as Designated May 1979

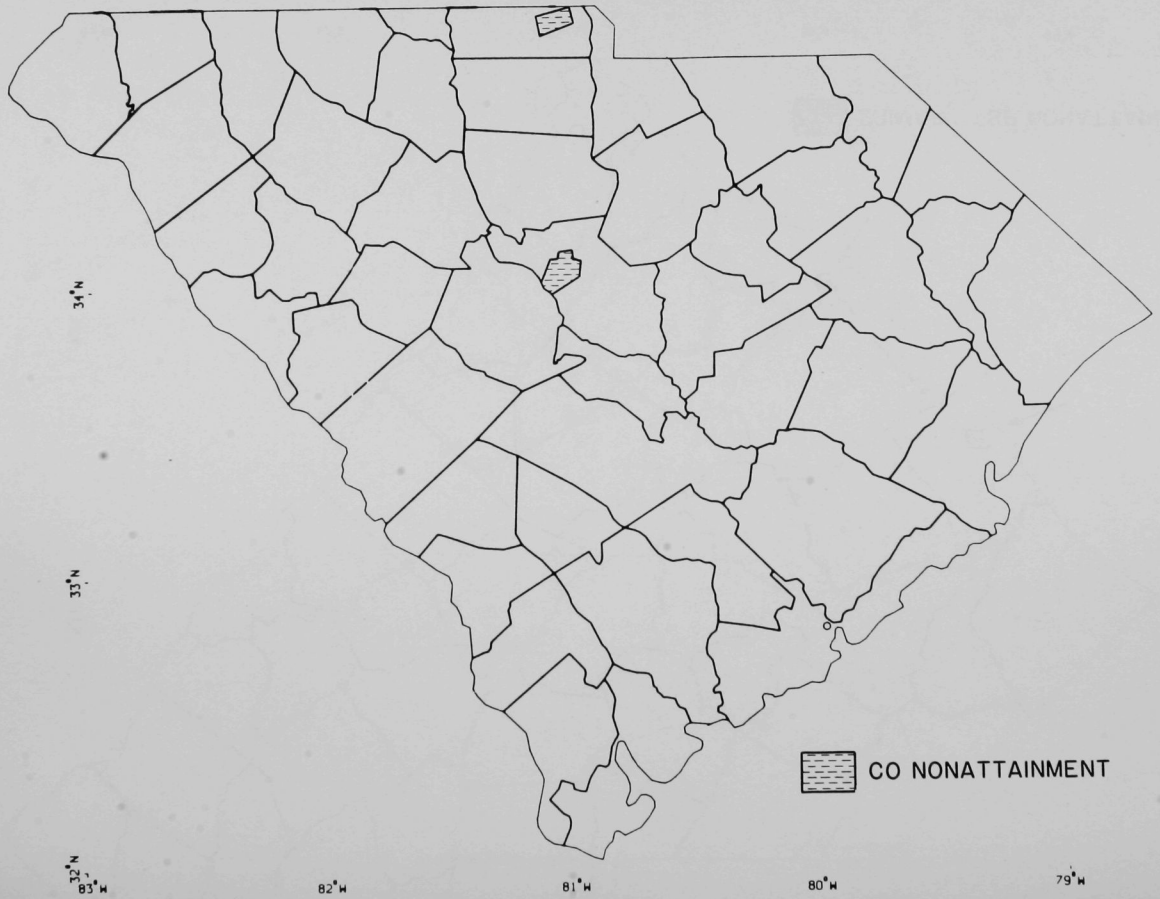


Fig. IV.85. South Carolina: CO Nonattainment Areas as Designated May 1979

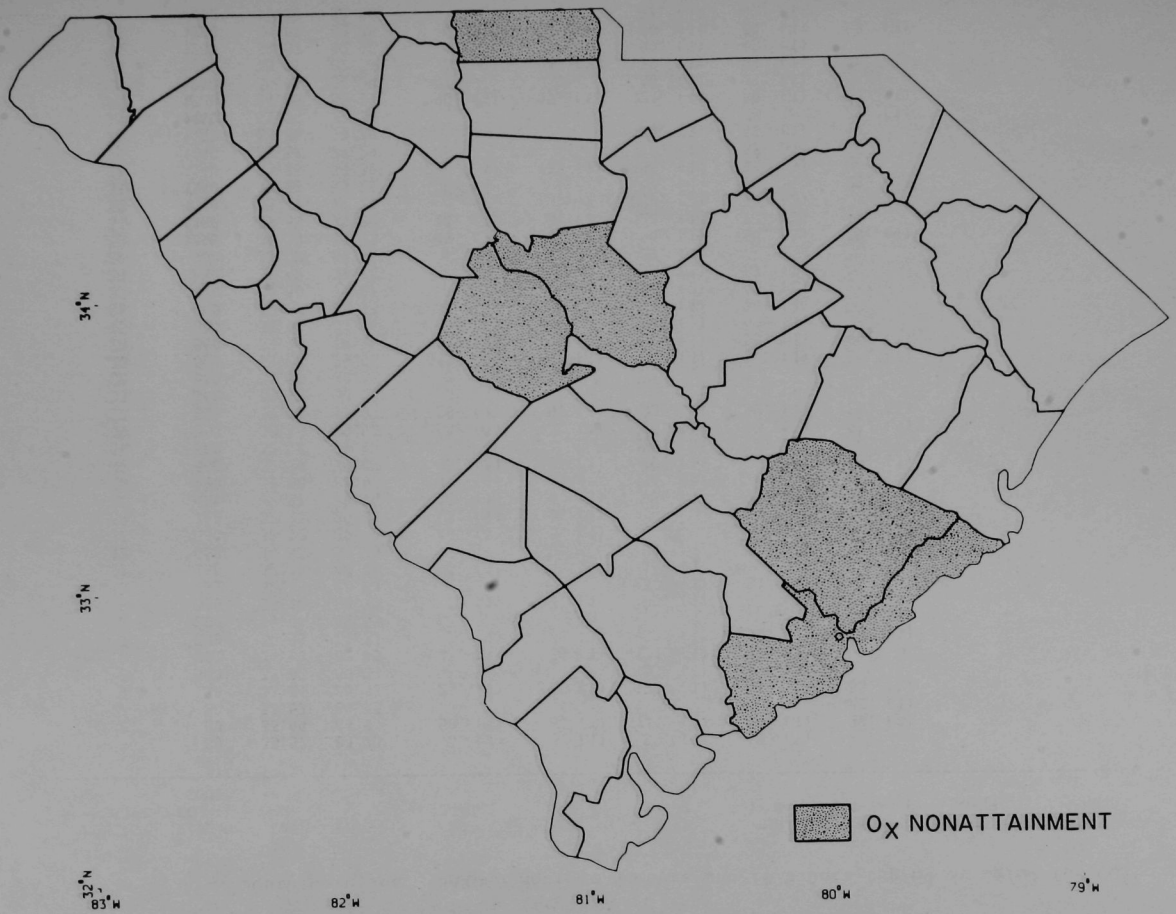


Fig. IV.86. South Carolina: O_X Nonattainment Areas as Designated May 1979

Table IV.15. South Carolina: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	80	33.57	81.73	3. (1)	3. (1)	82. (1)	40. (1)			
2	80	33.44	81.91	50. (1)	6. (1)	131. (1)	41. (1)	29. (1)		
3	80	33.57	81.73					20. (1)		
4 *	80	3.34	85.13	26. (1)	3. (1)	126. (1)	51. (1)	33. (1)		
5	160	33.02	81.31			83. (1)	36. (1)			
6	200	34.50	82.65	13. (1)	3. (1)	121. (1)	53. (1)			
7	200	34.56	82.71	7. (1)	3. (1)	82. (1)	31. (1)	25. (1)		
8	200	34.50	82.65					40. (1)		
9	360	32.12	80.70	7. (1)	3. (1)	99. (1)	42. (1)			
10	360	32.13	80.81			50. (1)	28. (1)			
11	360	32.15	80.73	3. (1)		66. (1)				
12	360	34.83	80.70			58. (1)	33. (1)			
13	360	32.12	80.70	16. (1)	5. (1)			18. (1)		
14	360	32.13	80.81	3. (1)	3. (1)			14. (1)		
15	420	32.97	79.94	18. (1)	3. (1)	97. (1)	46. (1)	14. (1)		
16	420	33.00	80.05	12. (1)		116. (1)				
17	560	32.79	79.87	45. (1)	6. (1)	80. (1)	34. (1)	12. (1)		
18	560	32.90	79.97			279. (3)	72. (2)			
19	560	32.83	79.95	58. (1)	5. (1)	278. (3)	93. (3)	43. (1)	5. (1)	
20	560	32.73	79.97	20. (1)	4. (1)	92. (1)	52. (1)	20. (1)		
21	560	32.93	80.03	3. (1)						
22	560	32.93	80.03	8. (1)						
23	560	32.83	79.98	118. (1)	4. (1)	123. (1)	56. (1)	30. (1)		
24	560	32.78	79.95	27. (1)	4. (1)	103. (1)	55. (1)	44. (1)		
25	600	35.08	81.66			107. (1)	49. (1)			
26	640	34.75	80.93			77. (1)	34. (1)			
27	820	34.30	79.87			199. (2)	60. (2)			
28	880	34.42	79.38			146. (1)	67. (2)			
29	900	33.22	80.45			89. (1)				
30	1040	34.20	79.75	19. (1)	13. (1)	96. (1)	50. (1)	29. (1)		
31	1140	33.38	79.29	38. (1)	5. (1)	121. (1)	73. (2)			
32	1140	33.37	79.30			220. (2)	70. (2)			
33	1140	33.38	79.29					22. (1)		
34	1140	33.36	79.30	210. (1)	17. (1)	185. (1)	77. (3)			
35	1140	33.37	79.29			175. (1)	55. (1)			
36	1140	33.36	79.29			120. (1)	48. (1)			
38	1140	33.36	79.30					22. (1)		
40	1200	34.85	82.39	50. (1)	15. (1)	121. (1)	50. (1)	50. (1)		
42	1200	34.93	82.29			80. (1)	39. (1)			
43 *	1200	35.06	82.36	6. (1)	3. (1)	77. (1)	29. (1)	10. (1)		
44	1200	34.87	82.42			90. (1)	43. (1)			
45	1200	34.87	82.35	6. (1)	3. (1)	99. (1)	38. (1)	25. (1)		
46	1200	34.82	82.40			93. (1)	42. (1)			

Table IV.15. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
47	1200	34.85	82.41	18. (1)	4. (1)	162. (1)	70. (2)	39. (1)		
48	1200	34.85	82.39			69. (1)	41. (1)			
50	1200	34.94	82.23	14. (1)	4. (1)	86. (1)	42. (1)	31. (1)		
51	1200	34.74	82.26	6. (1)	3. (1)	96. (1)	39. (1)	19. (1)		
52	1240	34.10	82.17	9. (1)	3. (1)	76. (1)	38. (1)	24. (1)		
53	1340	33.83	79.04	17. (1)	5. (1)	88. (1)	43. (1)	15. (1)		
54	1360	32.11	81.07	73. (1)	6. (1)	108. (1)	51. (1)	23. (1)		
55	1380	34.28	80.23	13. (1)	3. (1)	124. (1)	58. (2)	20. (1)		
56	1460	34.75	80.78	3. (1)	3. (1)	93. (1)	45. (1)	29. (1)		
57	1520	34.50	82.02	8. (1)	3. (1)	110. (1)	52. (1)	30. (1)		
58	1540	34.22	80.25			120. (1)	54. (1)			
59	1560	33.93	81.08	10. (1)	3. (1)	101. (1)	55. (1)	49. (1)		
60	1780	34.27	81.62	15. (1)	7. (1)	75. (1)	39. (1)	22. (1)		
61	1860	33.48	80.86	9. (1)	3. (1)	77. (1)	40. (1)	16. (1)		
62	1880	34.83	82.71	8. (1)	5. (1)	88. (1)	48. (1)	31. (1)		
64	1900	34.20	80.85			50. (1)	27. (1)			
65	1900	34.20	80.85	8. (1)	3. (1)	84. (1)	32. (1)	15. (1)		
66	1900	34.08	81.04	17. (1)	3. (1)	118. (1)	49. (1)	35. (1)	11. (3)	245. (4)
67	1900	34.20	80.85	10. (1)	4. (1)			14. (1)		
68	1900	34.01	80.94			63. (1)	36. (1)			
69	1900	34.04	81.02	16. (1)	4. (1)	85. (1)	47. (1)	34. (1)		
71	1900	34.04	81.06			60. (1)	37. (1)			
72	1900	33.98	81.00			166. (1)	59. (2)			
73	1900	34.00	81.05	10. (1)	3. (1)	87. (1)	45. (1)	38. (1)		
74	1900	34.01	81.04			121. (1)	48. (1)			
76	2060	34.95	81.94			125. (1)	51. (1)			
77	2060	34.97	81.95			134. (1)	50. (1)			
78	2060	34.95	81.94	7. (1)	3. (1)			45. (1)		
79 *	2060	35.12	82.04	9. (1)	3. (1)	71. (1)	34. (1)	14. (1)		
80	2060	34.90	81.76			97. (1)	46. (1)			
81	2060	34.91	81.99	3. (1)	3. (1)	112. (1)	44. (1)	22. (1)		
82	2060	34.94	81.93			158. (1)	49. (1)			
83	2060	34.96	82.12	30. (1)	5. (1)	128. (1)	42. (1)	26. (1)		
84	2060	34.74	82.04	9. (1)	3. (1)	109. (1)	45. (1)	20. (1)		
85	2140	33.93	80.34			111. (1)	50. (1)			
86	2140	33.92	80.32			175. (1)				
87	2140	33.93	80.34			126. (1)	51. (1)			
88	2140	33.93	80.34	7. (1)	3. (1)			22. (1)		
89	2140	33.92	80.32	18. (1)						
90	2440	35.02	81.26			77. (1)	40. (1)			
91 *	2440	35.12	81.10	29. (1)	5. (1)	89. (1)	44. (1)			
92 *	2440	35.02	81.26	19. (1)	5. (1)			21. (1)		
93	2440	35.12	81.10					20. (1)		

Table IV.15. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
94	2440	34.96	81.02							20. (1)
95	2440	34.96	81.00	76. (1)	16. (1)	153. (1)	64. (2)	40. (1)	7. (1)	210. (4)
96	2440	34.95	81.03	79. (1)	10. (1)	93. (1)	44. (1)	34. (1)		

Fig. IV.87. South Carolina: Locations of SAROAD Monitors (See Table IV.15 for Monitor Numbers)

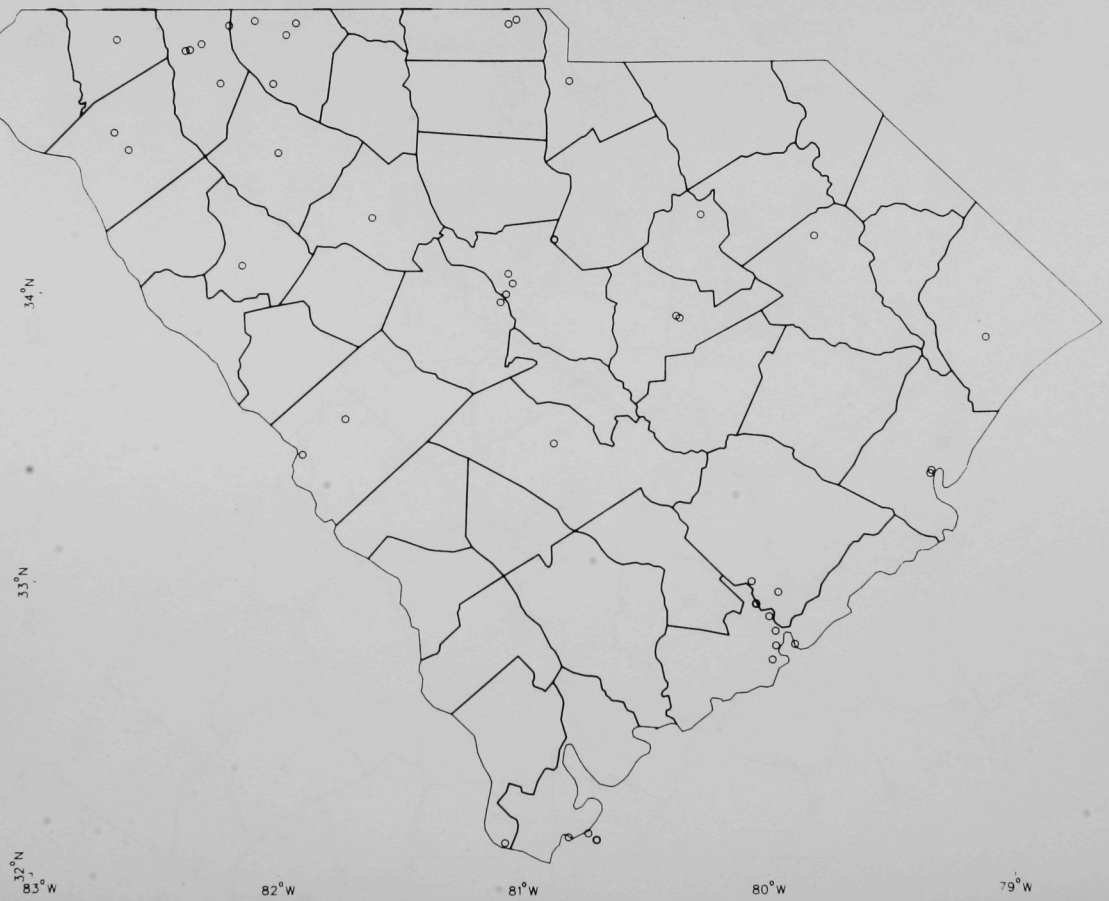


Fig. IV.88. South Carolina: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

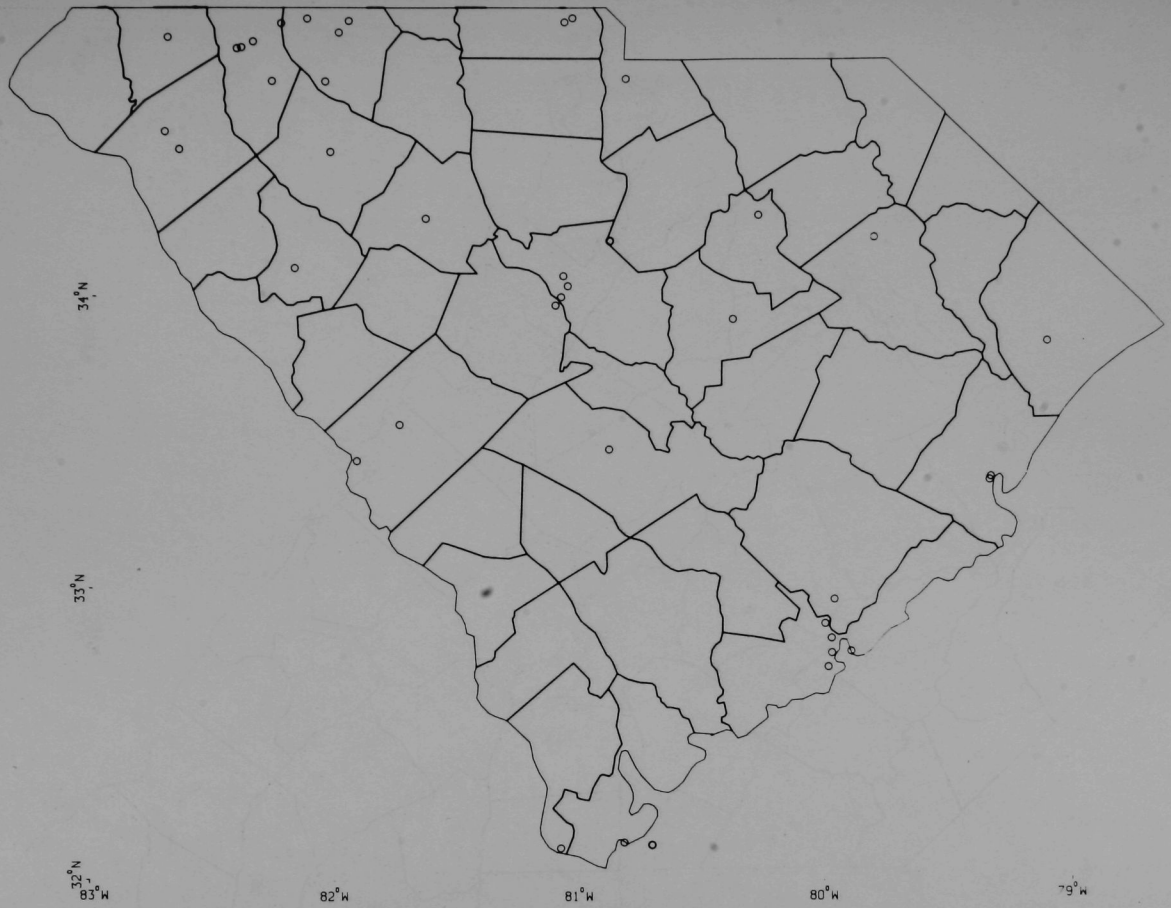


Fig. IV.89. South Carolina: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

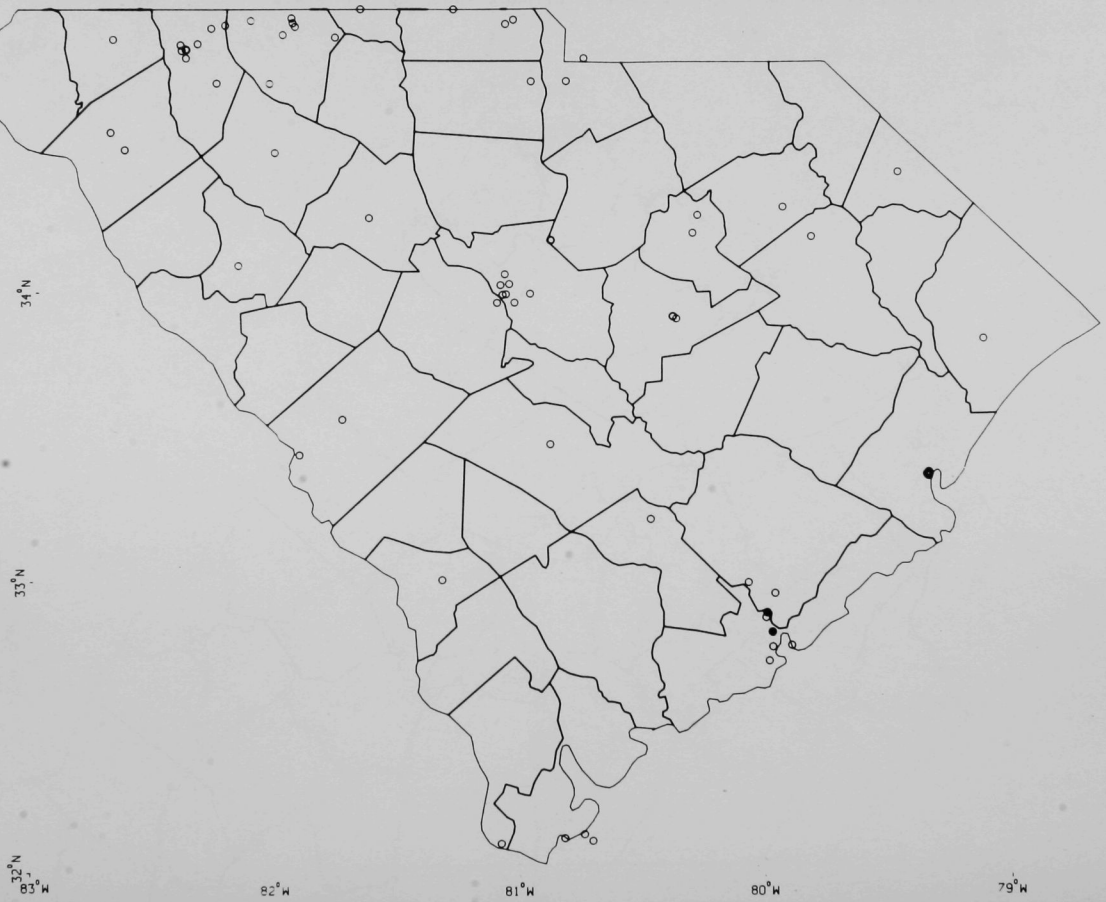


Fig. IV.90. South Carolina: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

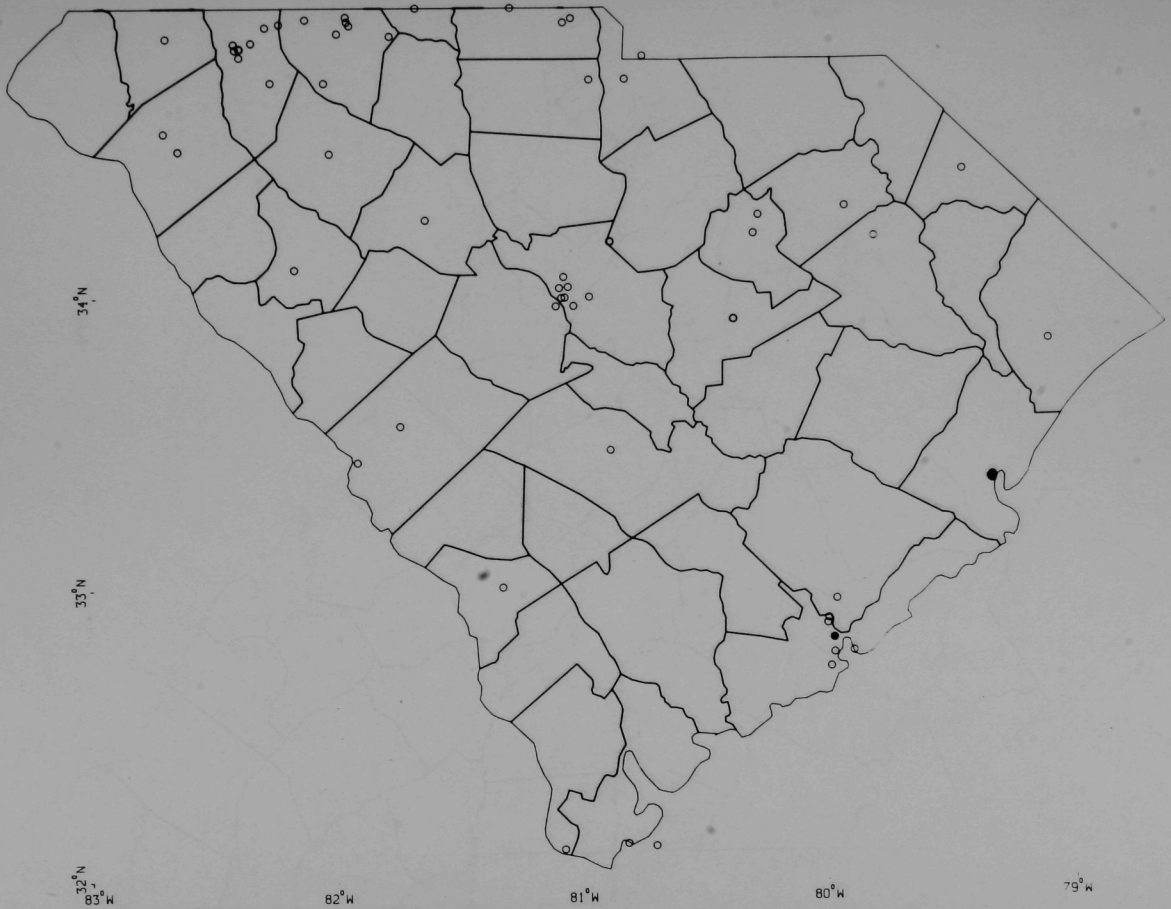


Fig. IV.91. South Carolina: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

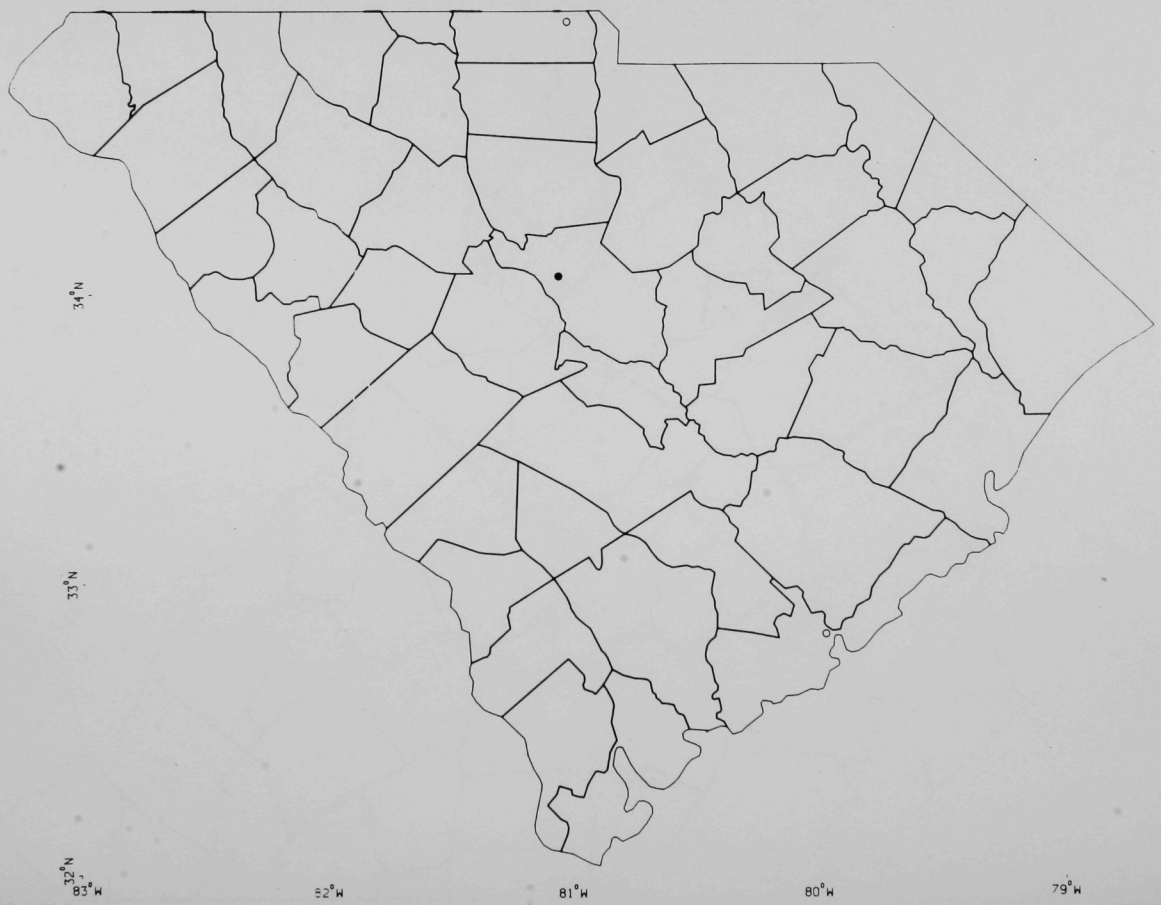


Fig. IV.92. South Carolina: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

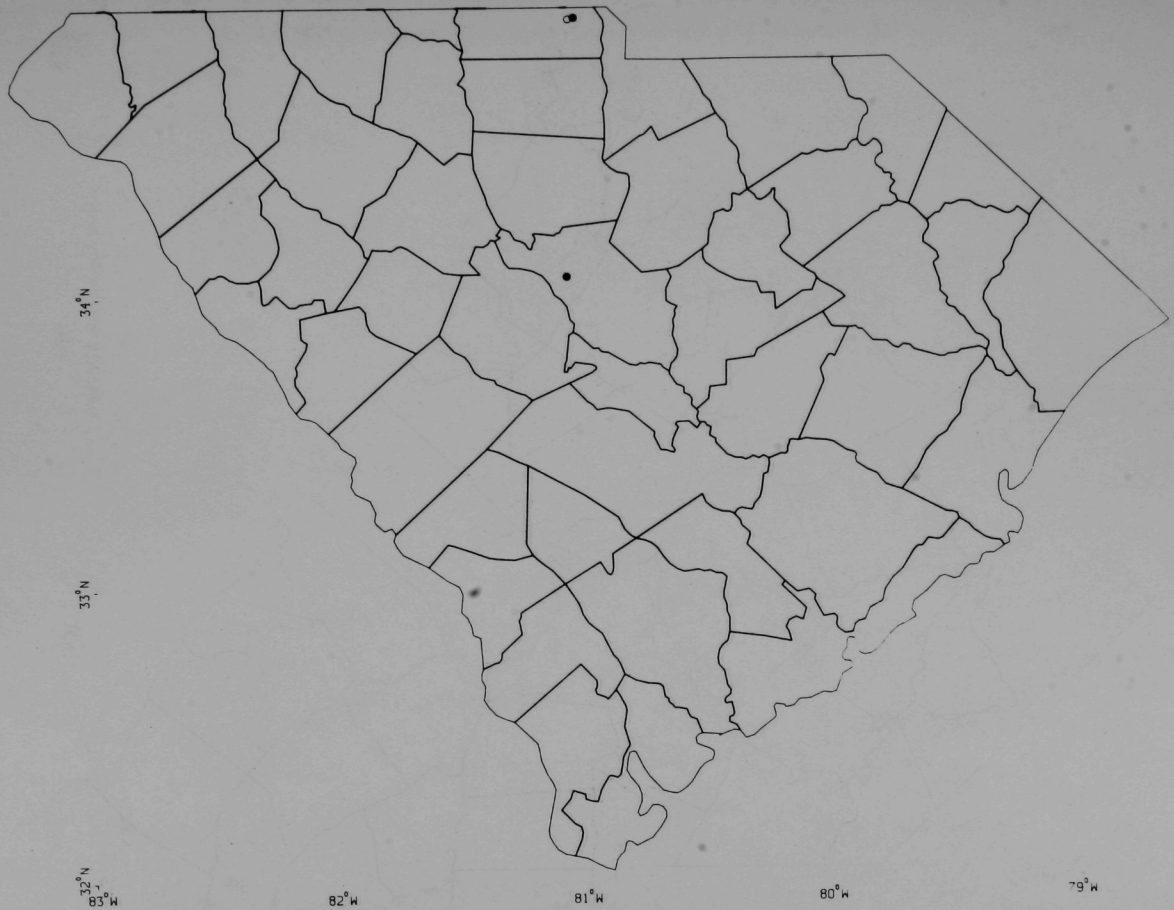


Fig. IV.93. South Carolina: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

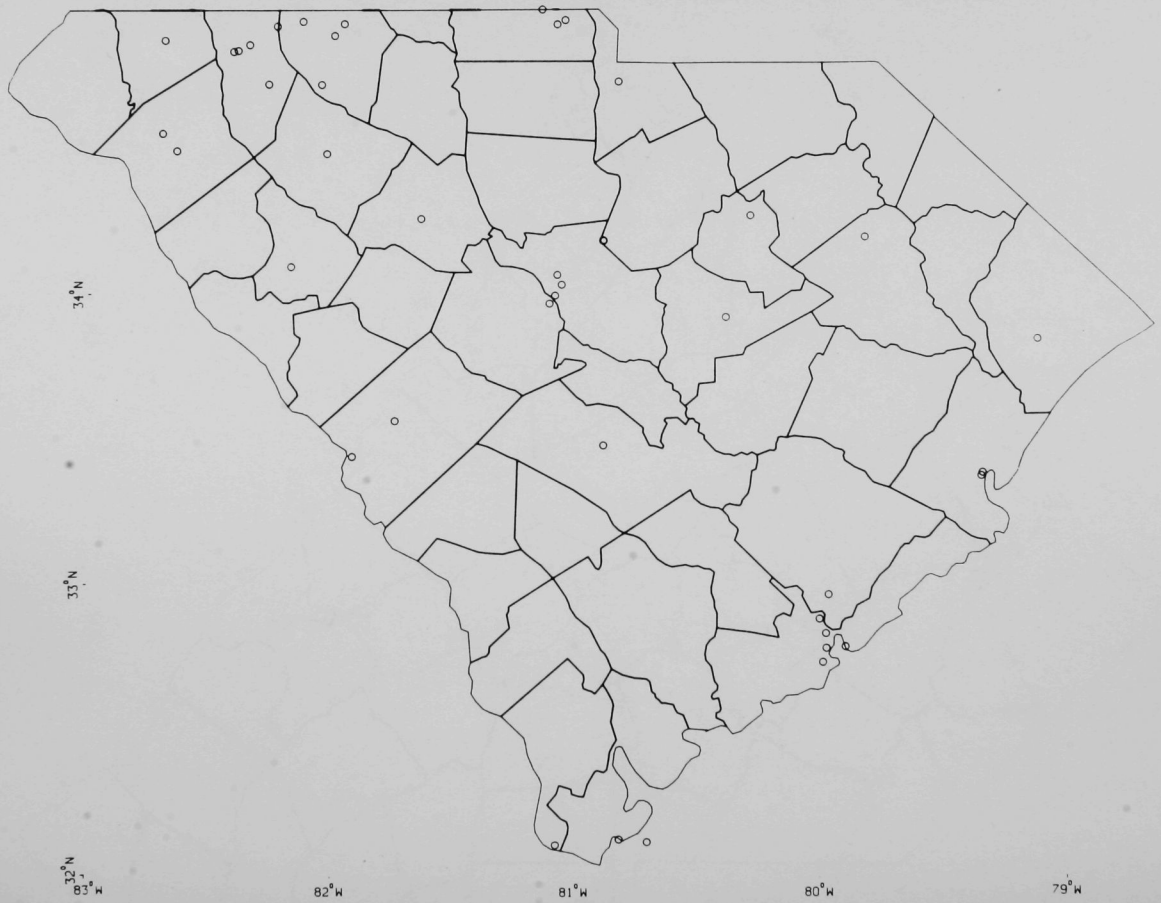


Fig. IV.94. South Carolina: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table IV.16. South Carolina: Power Plant and Fuel Use Data

SOUTH CAROLINA — POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	CANADYS	33.06	80.63	439.60	0.0
2	CATAWBA	34.98	81.19	18.20	0.0
3	CHEROKEE	35.06	81.62	18.20	0.0
4	GEORGETOWN 1	33.20	79.21	315.00	0.0
5	GRAINGER	33.62	79.65	103.20	0.0
6	HAGOOD	32.83	79.96	87.75	0.0
7	JEFFERIES	33.21	79.09	345.60	0.0
8	LEE	34.60	82.44	345.00	0.0
9	MONSEKIN	34.05	81.22	233.76	0.0
10	N* OCONEE	0.0	0.0	2561.00	0.0
11	ROBINSON	34.40	80.16	975.32	0.0
12	SUMMER STA.	34.60	81.12	16.00	0.0
13	URQUHART	33.44	81.91	230.00	0.0
14	WATEREE	33.31	80.84	771.80	0.0
15	WILLIAMS 1	33.02	79.93	632.70	0.0

N NUCLEAR * NOT PLOTTED

SOUTH CAROLINA — FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	CANADYS	1.31	276.51	0.10	5.47	2014.55
2	CATAWBA	0.0	0.0	0.0	0.0	0.0
3	CHEROKEE	0.0	0.0	0.0	0.0	0.0
4	GEORGETOWN 1	1.21	585.40	0.0	0.0	0.0
5	GRAINGER	1.52	225.20	0.0	0.0	0.0
6	HAGOOD	0.0	0.0	2.32	74.06	1288.53
7	JEFFERIES	1.11	625.70	1.55	33.80	0.0
8	LEE	1.07	615.94	0.20	10.01	0.0
9	MONSEKIN	1.16	317.59	0.70	1.70	5103.10
10	N* OCONEE	0.0	0.0	0.0	0.0	0.0
11	ROBINSON	1.22	273.20	0.10	16.00	2012.32
12	SUMMER STA.	0.0	0.0	0.0	0.0	0.0
13	URQUHART	1.53	427.82	0.30	0.73	2150.45
14	WATEREE	1.53	1285.72	0.10	47.60	0.0
15	WILLIAMS 1	0.0	0.0	2.00	4174.14	0.0

N NUCLEAR * NOT PLOTTED

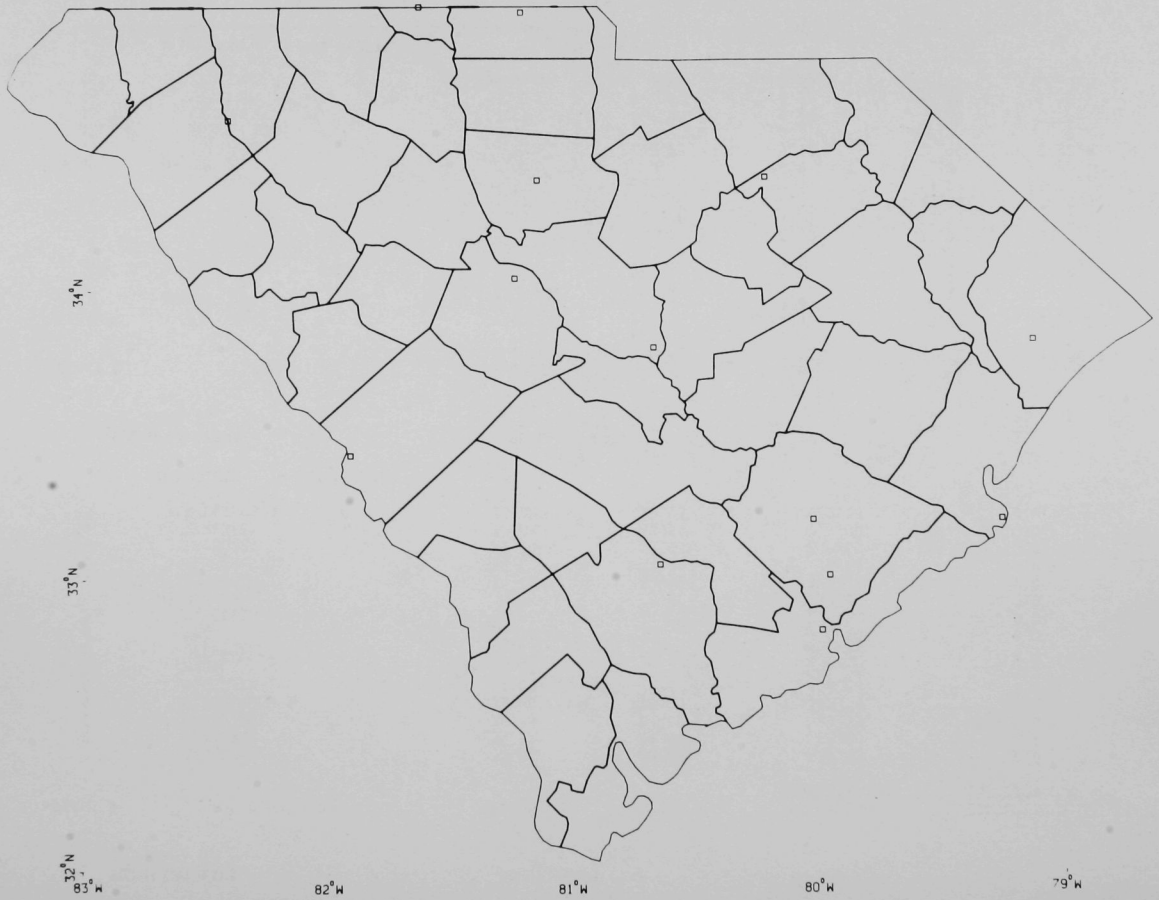


Fig. IV.95. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000, MW; Open, <1000 MW. Triangle = Nuclear)

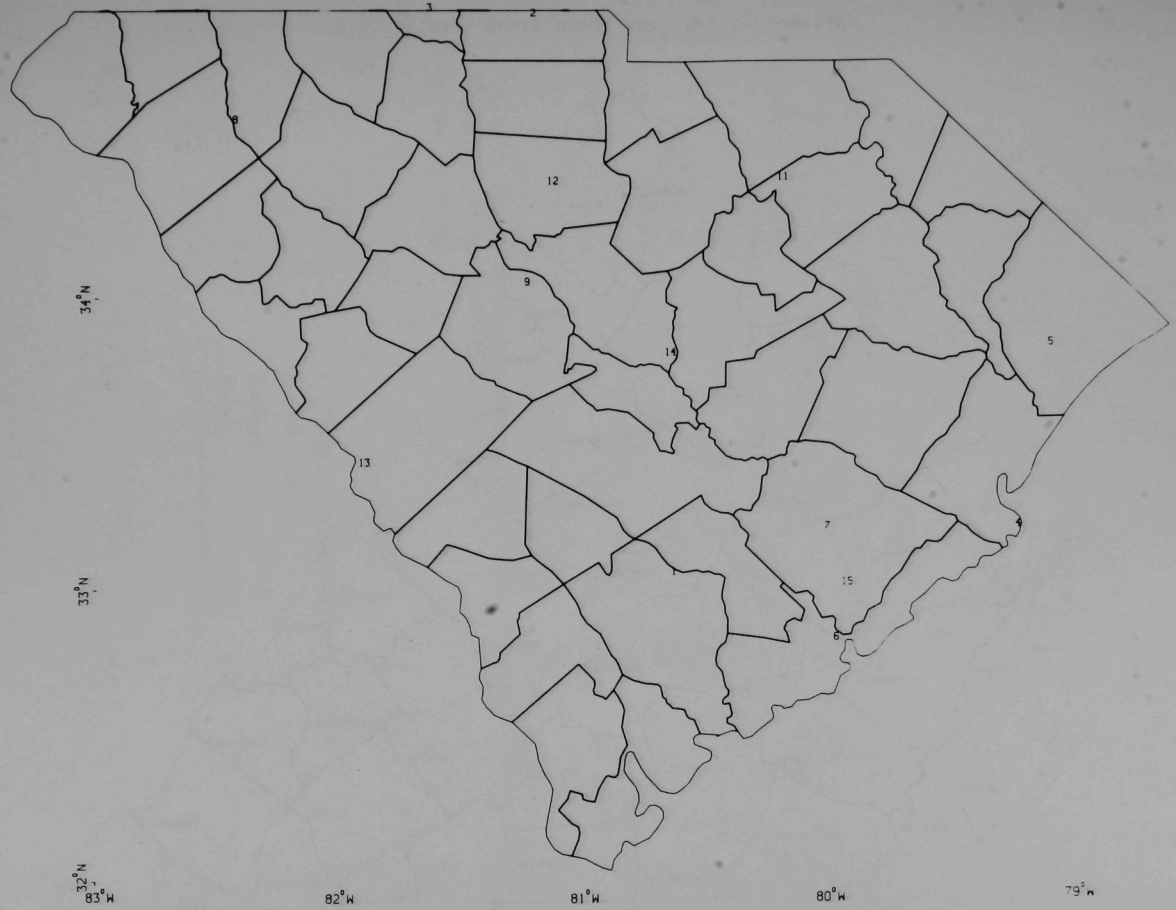


Fig. IV.96. Power Plant Key (See Table IV.16 for Identification and Fuel Use Data)

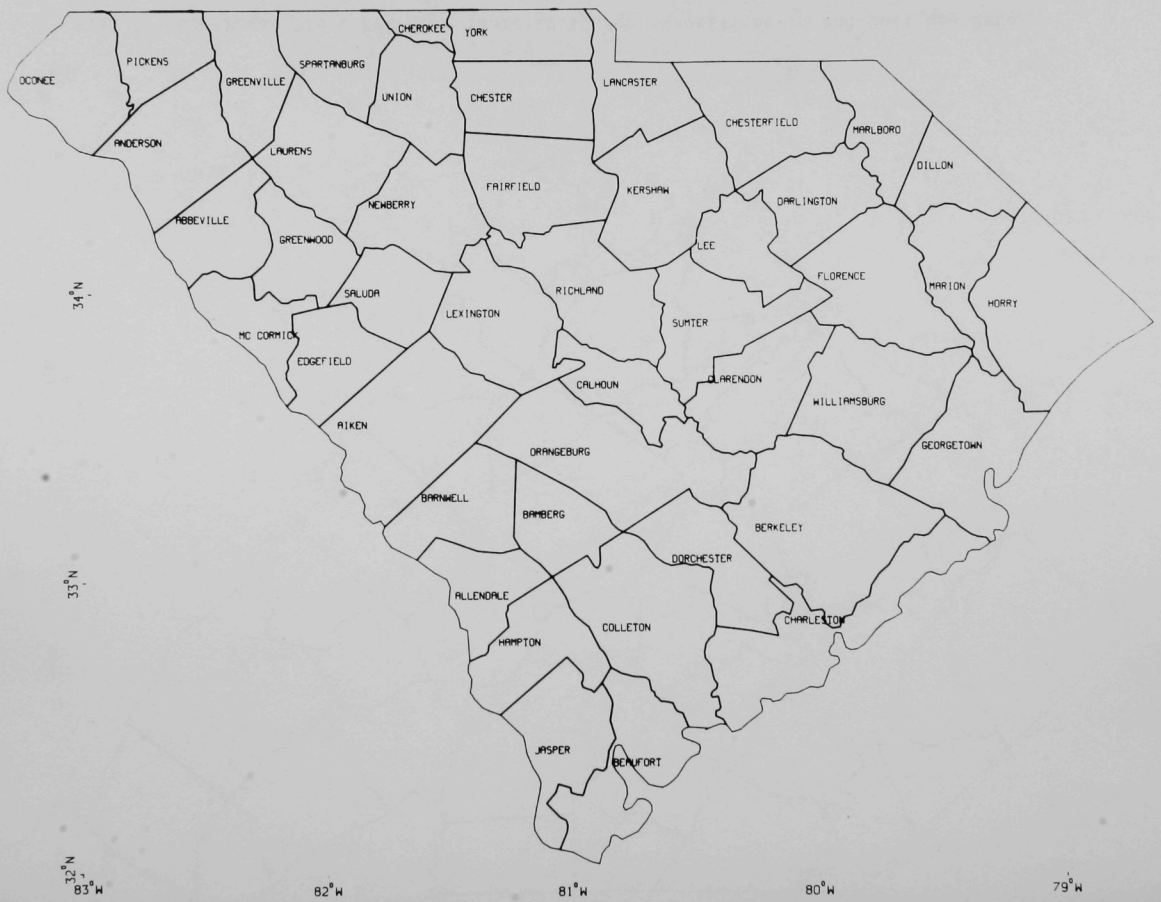


Fig. IV.97. South Carolina: Key to Counties

REGION IV: TENNESSEE

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	2	0	96	2
	1 yr			73	0
TSP	24 hr	10	3	144	2
	1 yr			120	6
NO_x	1 yr	0[b]	-	52	0
CO	8 hr	3	-	8	7
O_x	1 hr	5	-	10	9

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	8
Nuclear	2
Total	10

TENNESSEE

(Draft 1/79)

I. SOURCES OF THE PROBLEM

Tennessee designated two areas as in nonattainment for SO_2: a portion of Polk County, surrounding the Cities Service plant at Copperhill, and a portion of Benton and Humphries Counties, surrounding TVA's Johnsonville power plant. The Cities Service plant, a copper smelter, is the major source of SO_2 emissions in the nonattainment area, with some contributions from residential coal burning and school and hospital furnaces. The TVA plant's emissions, in excess of the SIP emission limitation, cause the violations in the second nonattainment area.

The state designated 10 areas as nonattainment for the primary TSP standard: 2 areas in Shelby Co. (downtown Memphis), a portion of Hamilton Co. (Chattanooga), 2 areas in Campbell Co. (downtown LaFollette and the area surrounding the Carborundum Company's silicon carbide manufacturing plant), 2 areas in Sullivan Co. (parts of the towns of Bristol and Kingsport), and portions of Roane Co. (Rockwood), Davidson (Nashville) and Maury (Columbia). Secondary nonattainment areas were designated in Anderson and Knox counties around TVA's Bull Run plant; in Sumner Co., surrounding TVA's Gallatin plant; and a ring around Nashville's primary nonattainment area. The violations recorded in the urban areas were determined to be the result of fugitive dust from roads and other nontraditional sources. Specific point sources were the causes of violations in three areas -- TVA's two out-of-compliance power plants and the fugitive process emissions from Carborundum's plant. Bristol's violations were the result of several point sources, whereas LaFollette's violations were the result of emissions from minerals handling and processing, an asphalt batch plant, a limestone aggregate plant, and a feed and grain mill.

The downtown areas of Knoxville, Nashville, and Memphis were designated as in nonattainment for CO, as a result of emissions from motor vehicles. Six counties around Nashville, and the counties surrounding Memphis, Chattanooga, Knoxville, and Bristol, were all designated as in nonattainment for ozone, as a result of emissions from motor vehicles and stationary sources of hydrocarbons.

II. ATTAINMENT STRATEGIES

A. SO_2

1. Polk County

   a. Copper smelter

      - RACT to be required
      - emission limitations set for startup and shutdown of processes
      - stack on liquid SO_2 plant to be increased to the maximum height consistent with good engineering practice

   b. Other sources (coal-fired heating)

      - any fuel-burning equipment in or affecting the nonattainment area
      - must use fuel oil with a sulfur content of no more than 0.5%

2. Benton/Humphries

   a. TVA's Johnsonville plant currently out of compliance

      - compliance would result in attainment
      - plant subject to court suit brought by EPA against TVA

B. TSP

1. Bristol

   a. One of two point sources moving out of state in 1980

   b. New general state regulation on fugitive process emissions and fugitive dust

2. Campbell

   a. LaFollette

      - control fugitive dust on plant property
      - reduce hours of operation
      - compliance with new state TSP regulation

b. Jacksboro (Carborundum plant)

- control fugitive dust at loading and unloading areas
- reduce dust during crushing, screening, and bagging processes

3. Sumner

a. TVA's plant now in compliance

b. No further controls needed

4. Anderson/Knox

a. Violation caused by TVA plant's malfunctioning controls

b. Now repaired, no further controls needed

5. Urban areas

a. RACT already required on point sources

b. Statewide regulations on fugitive dust

c. Schedule to develop controls on non-traditional sources

C. CO

1. Knoxville

a. A rural area (population < 200,000)

b. No additional controls required

2. Nashville and Memphis

a. Request for extension of deadline for attainment to 1987

b. FMVECP

c. Transportation improvement

d. Inspection and maintenance of vehicles

D. O_x

1. Motor vehicle sources

a. FMVECP

b. Inspection and maintenance of vehicles

2. Stationary sources

   a. RACT in accordance with EPA's control techniques guidance

   b. Vapor recovery on gasoline stations

III. NEW SOURCE REVIEW

A small growth rate is projected for the Copper Basin area, according to estimates provided by the State Planning Office. In Johnsville, no projected growth rate was considered necessary since the existing SIP was adequate to achieve attainment. New major sources of TSP, CO, and O_x (HC) will be subject to EPA's emission offset policy.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Class I: Polk Co.

   a. Fuel input > 1000 MM Btu per hr: 1.2 lb SO_2 per MM Btu

   b. Fuel input < 1000 MM Btu per hr: 1.6 lb SO_2

2. Class II: Humphries, Maury, Roane

   a. Fuel input > 1000 MM Btu per hr: 1.2 lb SO_2 per MM Btu

   b. Fuel input < 1000 MM Btu per hr: 5.0 lb SO_2

3. Class III: Sullivan

   a. All sources: 2.4 lb SO_2 per MM Btu

4. Class IV: Shelby

   a. All coal-fired sources: 4.0 lb SO_2 per MM Btu

   b. Sources burning #5 or #6 fuel oil or solid fuels other than coal: 2.7 lb SO_2 per MM Btu

5. Class V: Anderson, Davidson, Hamilton, Hawkins, Knox, Rhea

   a. All sources: 4.0 lb SO_2 per MM Btu

6. Class VI: All other counties

   a. All sources: 5.0 lb SO_2 per MM Btu

7. New sources (after April 3, 1972)

   a. Fuel input < 250 MM Btu per hr

      - Class I: 1.6 lb SO_2 per MM Btu
      - Class III: 2.4 lb SO_2
      - Class V: 4.0 lb SO_2
      - Classes II and VI: 5.0 SO_2
      - Class IV: same as in A.4. above

   b. Fuel input > 250 MM Btu per hr: NSPS

B. TSP

1. Existing combustion equipment (constructed before April 3, 1972)

   a. Fuel input $\leq$ 10 MM Btu per hr: 0.6 lb PM per MM Btu

   b. Fuel input > 10,000 MM Btu per hr: 0.1 lb PM

   c. Interpolate within this range for sources of intermediate size

2. New sources

   a. Fuel input $\leq$ 10 MM Btu per hr: 0.6 lb PM per MM Btu

   b. Fuel input > 250 MM Btu per hr: 0.1 lb PM

3. Fugitive dust standards to be set for process-related fugitive dust sources and nontraditional sources in nonattainment areas

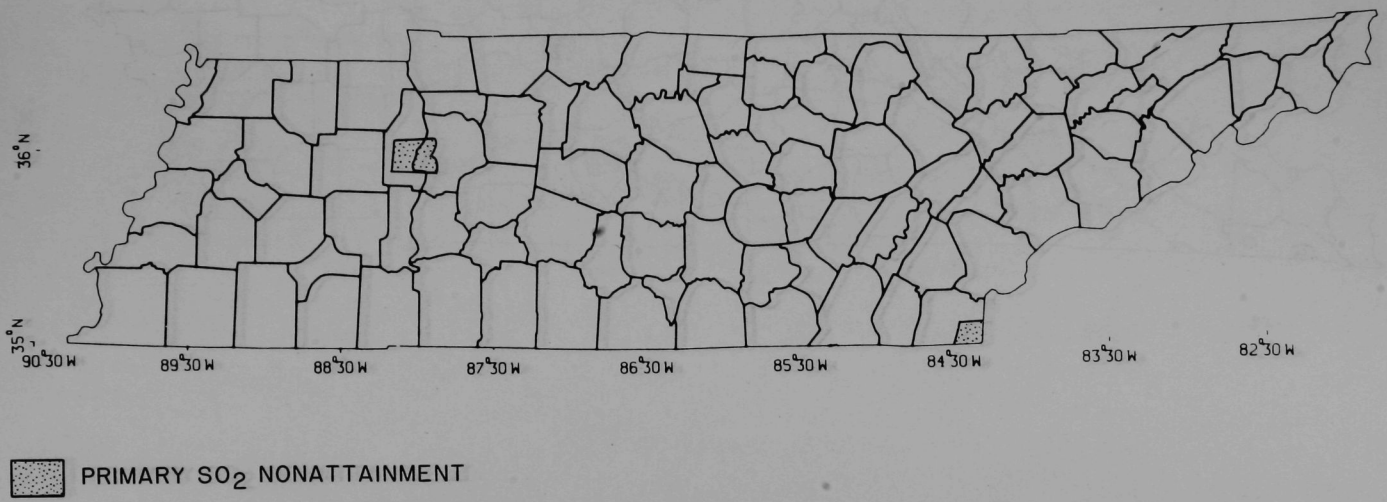


Fig. IV.98. Tennessee: SO_2 Nonattainment Areas as Designated May 1979

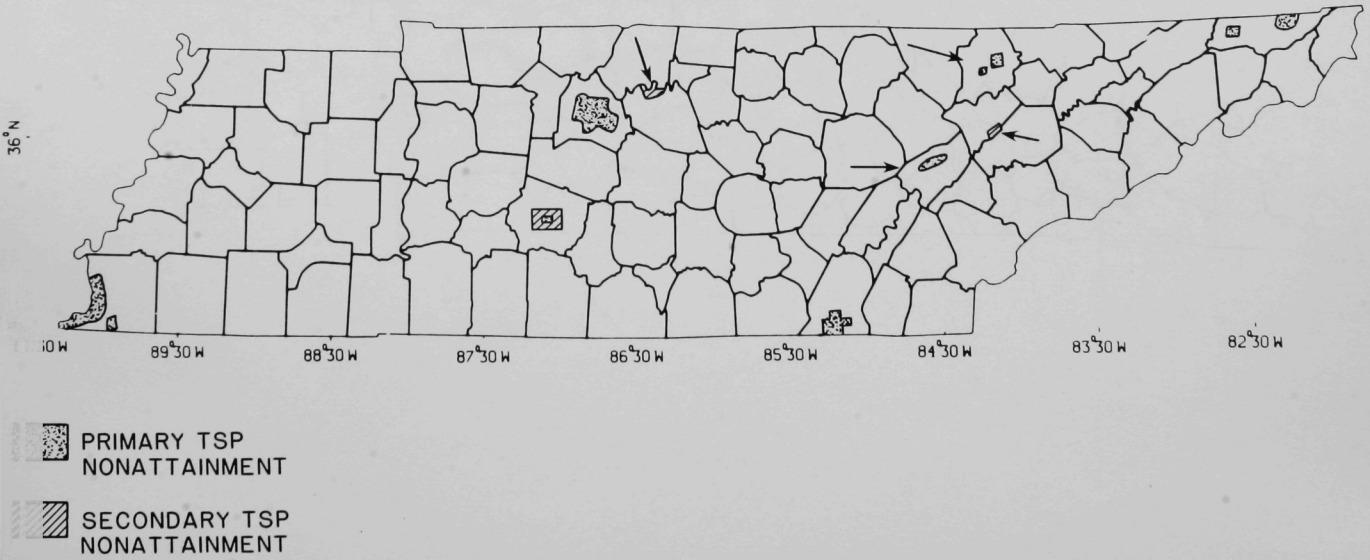


Fig. IV.99. Tennessee: TSP Nonattainment Areas as Designated May 1979

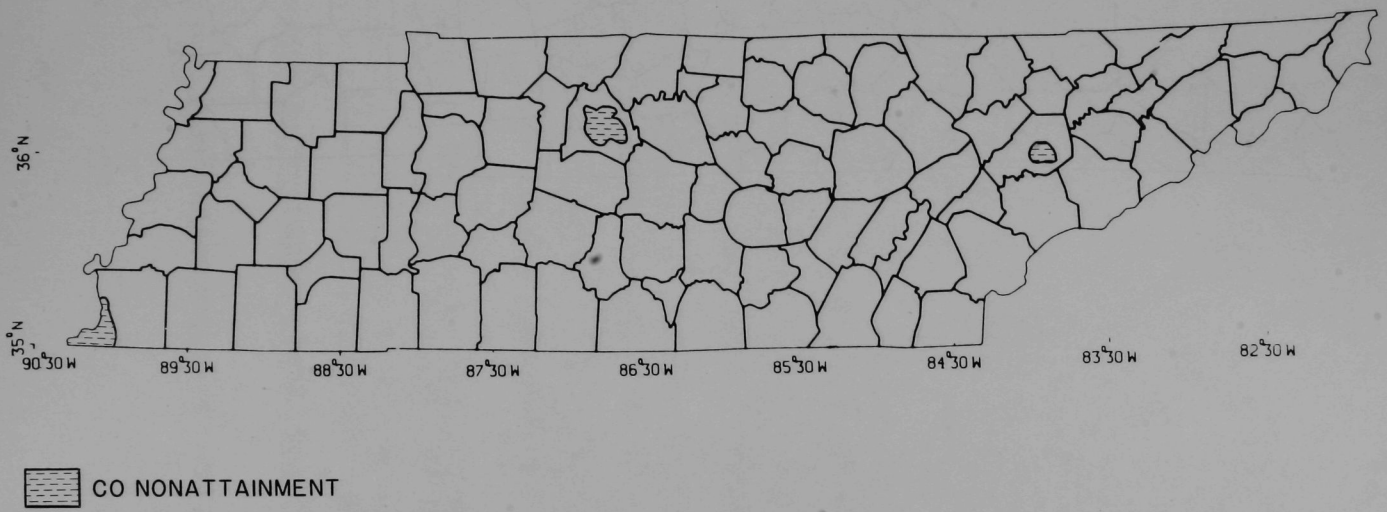


Fig. IV.100. Tennessee: CO Nonattainment Areas as Designated May 1979

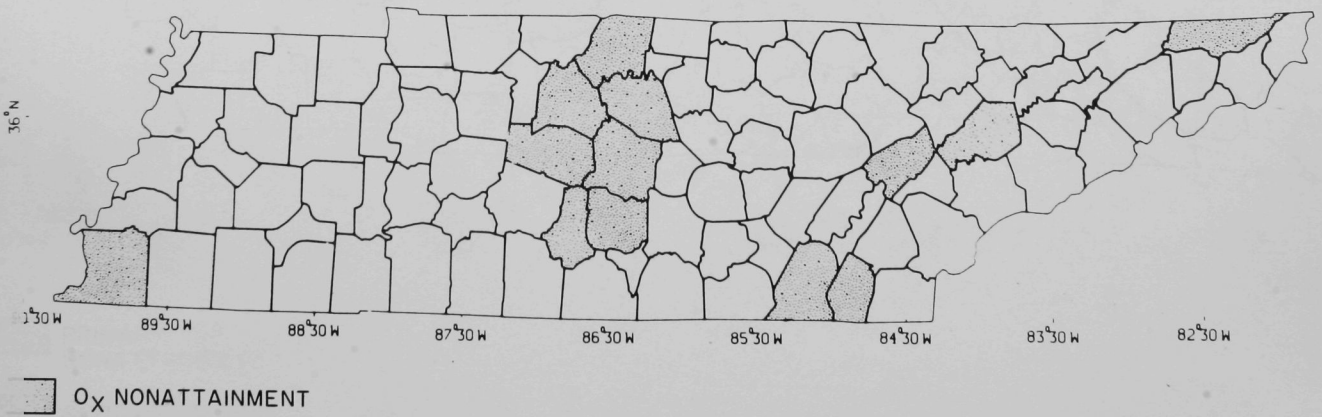


Fig. IV.101. Tennessee: O_x Nonattainment Areas as Designated May 1979

Table IV.17. Tennessee: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
2	40	36.04	84.14			223. (2)				
3	40	36.03	84.15			156. (1)				
4	40	35.99	84.21	113. (1)	14. (1)					
5	40	36.06	84.09			112. (1)	46. (1)			
6	40	36.04	84.12	80. (1)	16. (1)	88. (1)	50. (1)			
8	40	36.02	84.23	63. (1)	17. (1)	82. (1)	40. (1)			
9	40	36.02	84.24			115. (1)	53. (1)			
10	40	36.10	84.13	58. (1)	15. (1)	115. (1)	58. (2)	30. (1)		
11	80	35.49	86.46			124. (1)	53. (1)			
12	140	36.06	88.00			120. (1)	51. (1)			
14	140	36.06	88.10	37. (1)	6. (1)			14. (1)		
16	180	35.75	83.97			139. (1)	59. (2)			
17	220	35.19	84.86			155. (1)	51. (1)			
18	220	35.16	84.83			168. (1)	61. (2)			
19	300	36.38	84.12			165. (1)	65. (2)			
20	360	36.35	82.22			89. (1)	46. (1)			
21	560	35.36	86.22	42. (1)	8. (1)	78. (1)	32. (1)	17. (1)		
22	560	35.36	86.21			132. (1)	60. (2)			
23	680	35.83	85.06	19. (1)		117. (1)	38. (1)	8. (1)		
25	680	35.94	85.02			76. (1)	23. (1)			
26	700	36.16	86.78						20. (4)	
27	700	36.07	86.83	74. (1)	9. (1)	93. (1)	40. (1)	20. (1)		
28	700	36.05	86.90	38. (1)	8. (1)	113. (1)	43. (1)	20. (1)		
29	700	36.19	86.96	41. (1)	7. (1)	113. (1)	45. (1)	17. (1)		
30	700	36.22	86.83	33. (1)		123. (1)				
31	700	36.33	86.72	18. (1)	5. (1)	98. (1)	52. (1)	28. (1)		
32	700	36.25	86.65	46. (1)	8. (1)	105. (1)	49. (1)	33. (1)		
33	700	36.18	86.80						8. (2)	
34	700	36.18	86.85	37. (1)	8. (1)	160. (1)	67. (2)	33. (1)		225. (4)
35	700	36.20	86.74	218. (1)	13. (1)	117. (1)	64. (2)	29. (1)		392. (4)
36	700	36.15	86.81	127. (1)	13. (1)	157. (1)	62. (2)	35. (1)	16. (4)	
37	700	36.13	86.80	116. (1)	16. (1)	118. (1)	43. (1)	35. (1)		
38	700	36.16	86.84	22. (1)	8. (1)	170. (1)	73. (2)	31. (1)		
39	700	36.18	86.79	92. (1)	14. (1)	228. (2)	95. (4)	45. (1)		
40	700	36.18	86.74	50. (1)	10. (1)	152. (1)	72. (2)	53. (1)		
41	700	36.18	86.74	39. (1)	8. (1)	173. (1)	58. (2)	30. (1)		
42	700	36.10	86.73	51. (1)	7. (1)	74. (1)	46. (1)	31. (1)		
43	700	36.14	86.75	51. (1)	9. (1)	145. (1)	73. (2)	45. (1)		
44	700	36.17	86.78	29. (1)		125. (1)				
46	840	36.03	89.33			132. (1)	37. (1)			
47	840	36.04	89.37			139. (1)	46. (1)			
48	1120	35.97	88.94			119. (1)	44. (1)			
49	1120	35.82	88.90			84. (1)	31. (1)			

Table IV.17. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
50	1140	35.28	86.90			72. (1)	26. (1)			
51	1200	36.16	82.83			120. (1)	45. (1)			
52	1200	36.18	82.80			111. (1)	46. (1)			
53	1260	36.23	83.25	65. (1)	12. (1)	136. (1)	57. (2)	31. (1)		
54	1260	36.21	83.30			253. (2)	79. (3)			
55 *	1280	35.21	220.60	32. (1)	14. (1)	182. (1)	65. (1)	47. (1)		
56	1280	35.11	85.15			120. (1)				
57	1280	34.99	85.24	43. (1)	14. (1)	131. (1)	54. (1)	35. (1)		
58	1280	35.09	85.20			112. (1)				
59	1280	35.14	85.15			104. (1)				
60	1280	35.06	85.16			115. (1)				
61	1280	35.08	85.19			113. (1)				
63 *	1280	0.0	0.0	27. (1)		91. (1)				
64	1280	35.00	85.29	68. (1)	16. (1)	228. (2)	78. (3)	45. (1)	12. (3)	240. (4)
65	1280	35.59	85.22			112. (1)				
66	1280	35.02	85.26			112. (1)				
67	1280	30.64	85.21	13. (1)	13. (1)	85. (1)	32. (1)	17. (1)		
68	1280	35.04	85.31	50. (1)	16. (1)	160. (1)	76. (3)	48. (1)		
69	1280	35.06	85.26	27. (1)	14. (1)	148. (1)	75. (2)	42. (1)		
70	1280	35.01	85.34	13. (1)	14. (1)	90. (1)	38. (1)	15. (1)		
71	1280	35.05	85.20	13. (1)	13. (1)	107. (1)	44. (1)	40. (1)		
73	1280	35.02	85.32	45. (1)	16. (1)	172. (1)	71. (2)	40. (1)		
74	1280	35.04	85.31	44. (1)		138. (1)	62. (2)	50. (1)		
76	1280	35.11	85.30			140. (1)				
77	1280	35.12	85.35	38. (1)	15. (1)	142. (1)	57. (2)	34. (1)		
78	1280	35.13	85.28			121. (1)				
80 *	1280	0.0	0.0	36. (1)		101. (1)	43. (1)			
81	1380	36.41	83.00	112. (1)	17. (1)					
82	1380	36.39	82.93		43. (1)	101. (1)	41. (1)			
84	1380	36.37	82.98	214. (1)	25. (1)	89. (1)	45. (1)			
85	1380	36.39	82.93	247. (1)						
86	1460	36.30	88.29			95. (1)	38. (1)			
88	1500	36.35	87.59	175. (1)	19. (1)	93. (1)	36. (1)			
89	1500	36.32	87.69	208. (1)	20. (1)	46. (1)				
91	1540	36.06	87.95			153. (1)	48. (1)			
92	1540	35.99	87.99			187. (1)	28. (1)			
93	1540	36.02	87.97			25. (1)				
96	1540	36.01	87.96			190. (1)	44. (1)			
98	1540	36.06	87.96	246. (1)	49. (1)	278. (3)	63. (2)	16. (1)		
99	1720	36.10	83.77	13. (1)	5. (1)	68. (1)	30. (1)	20. (1)		
100	1720	35.98	83.93						16. (4)	
101	1720	35.96	83.93			210. (2)			16. (4)	
102 *	1720	69.77	83.63	25. (1)	8. (1)	133. (1)	67. (2)			

Table IV.17. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
103	1720	36.00	83.85	24. (1)	7. (1)	114. (1)	61. (2)	39. (1)		
104	1720	35.94	83.91	21. (1)		86. (1)				
105 *	1720	69.54	83.61	26. (1)	10. (1)	136. (1)	67. (2)	68. (1)		
106	1720	35.96	83.92	26. (1)	11. (1)	110. (1)	60. (2)	48. (1)		
107	1720	36.00	83.83	38. (1)	14. (1)	87. (1)	57. (2)	50. (1)		
109	1720	35.93	83.76	13. (1)	5. (1)	119. (1)	47. (1)	20. (1)		
110	1720	36.00	84.06	26. (1)	7. (1)	101. (1)	37. (1)	23. (1)		
111	1820	35.26	87.31			133. (1)	37. (1)			
112	1960	35.14	86.57			103. (1)	48. (1)			
113	2080	35.44	84.60			110. (1)	55. (1)			
114	2100	35.64	88.83			140. (1)	54. (1)			
115	2100	35.60	88.81			128. (1)	36. (1)			
116	2220	35.05	85.68	37. (1)		126. (1)	36. (1)			249. (4)
117	2300	35.54	87.24	112. (1)						
118	2300	35.62	87.04			180. (1)	73. (2)			
119	2300	35.61	87.07	262. (1)		148. (1)	56. (1)			206. (4)
120	2300	35.62	87.04	3. (1)						
121	2400	35.64	84.31			80. (1)	38. (1)			
122	2420	36.52	87.39	92. (1)	22. (1)					
123	2420	36.66	87.45	181. (1)	28. (1)					
124	2420	36.54	87.36			77. (1)				
125	2420	36.53	87.36			99. (1)	43. (1)			
126	2420	36.52	87.32			97. (1)	43. (1)			
127	2420	36.54	87.35	108. (1)		127. (1)				
128	2420	36.54	87.36	84. (1)						
129	2640	36.42	89.06			149. (1)	59. (2)			
130	2740	34.99	84.37			140. (1)	60. (2)			
131	2740	35.03	84.39	783. (4)						
133	2800	36.16	85.49			87. (1)	32. (1)			
134	2800	36.16	85.51			98. (1)	46. (1)			
135	2800	36.17	85.51	154. (1)						
137	2840	35.62	84.79			80. (1)	34. (1)			
140	2880	35.88	84.69	113. (1)	19. (1)	168. (1)	72. (2)	40. (1)		
142	2880	35.83	84.46			126. (1)	50. (1)			
143	2880	35.93	84.55			98. (1)	46. (1)			
145	2880	35.94	84.55			113. (1)	52. (1)			
146	2880	35.83	84.50			147. (1)	47. (1)			
147	2880	35.88	84.51	430. (3)	34. (1)	161. (1)	62. (2)			
148	2960	36.51	86.89			134. (1)	60. (2)			
149	2960	35.85	86.38			77. (1)	39. (1)			
150	2960	35.84	86.39			104. (1)	50. (1)			
151	3080	35.05	90.12	88. (1)						
152	3080	35.11	90.12	158. (1)	20. (1)	251. (2)	67. (2)			

Table IV.17. (Cont'd)

MONITOR NUMBER	SARCAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
153	3080	35.05	90.17	179. (1)	12. (1)					
155	3080	35.13	90.04			185. (1)	98. (4)	86. (2)	11. (3)	225. (4)
156 *	3080	35.01	92.24	163. (1)	47. (1)	116. (1)	62. (2)	70. (1)		
157 *	3080	3.51	91.30	46. (1)	16. (1)	97. (1)	52. (1)	60. (1)		
158	3080	35.22	90.02	107. (1)	22. (1)	134. (1)	62. (2)	64. (1)	11. (3)	255. (4)
159	3080	35.08	90.03			507. (4)	115. (4)			
160	3080	35.03	90.08	288. (2)	44. (1)	135. (1)	55. (1)			
161	3080	35.15	90.05	225. (1)	28. (1)	137. (1)	67. (2)	75. (1)		
162	3080	35.16	89.97			126. (1)	71. (2)	67. (1)		
163	3080	35.09	89.95			122. (1)	63. (2)			
164	3080	35.17	90.04			144. (1)	69. (2)	77. (2)		
166	3080	35.13	90.04	28. (1)	12. (1)	115. (1)	67. (2)	68. (1)		
168	3080	35.29	89.67	40. (1)	14. (1)	81. (1)	37. (1)	47. (1)		
169	3080	35.28	89.97			95. (1)	41. (1)			
170	3080	35.04	89.66			108. (1)	56. (1)			
171	3280	36.49	87.77	124. (1)	25. (1)					
173	3280	36.43	87.71	114. (1)	25. (1)					
174	3280	36.44	87.60	140. (1)	21. (1)	111. (1)	42. (1)			
176	3280	36.47	87.58	181. (1)		79. (1)				
177	3280	36.38	87.73	188. (1)	20. (1)	52. (1)				
178	3280	36.44	87.65	124. (1)	17. (1)					
179	3280	36.39	87.63	109. (1)	19. (1)	138. (1)	45. (1)			
180	3280	36.46	87.59	93. (1)		79. (1)				
181	3280	36.44	87.60	153. (1)						
182	3300	36.54	82.32							45. (1)
183	3300	36.59	82.16	45. (1)	14. (1)					
185	3300	36.56	82.57	158. (1)						
186	3300	36.55	82.53	180. (1)						
187	3300	36.54	82.53			141. (1)	59. (2)			
188	3300	36.54	82.54	162. (1)						
189	3300	36.55	82.58			224. (2)				
190	3300	36.54	82.53	190. (1)				38. (1)		304. (4)
191	3320	36.34	86.40			198. (2)	52. (1)			
192	3320	36.30	86.65	31. (1)	7. (1)			25. (1)		
193	3320	36.38	86.33			145. (1)	30. (1)			
194	3320	36.36	86.39			86. (1)	35. (1)			
195	3320	36.34	86.40	165. (1)	16. (1)					
197	3320	36.30	86.65							292. (4)
198	3320	36.38	86.43	87. (1)	10. (1)	87. (1)	37. (1)			
199	3320	36.38	86.45			102. (1)	42. (1)			
200	3540	35.68	85.78			77. (1)	39. (1)			
201	3560	36.32	82.36	37. (1)	10. (1)	140. (1)	61. (2)	40. (1)		
202	3700	35.92	86.88			108. (1)	48. (1)			
203	3720	36.31	86.44	128. (1)	12. (1)					
204	3720	36.33	86.37		14. (1)					

Table IV.17. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
205	3720	36.29	86.39	166. (1)	16. (1)					
206	3720	36.33	86.37	154. (1)						
207	3720	36.20	86.23			105. (1)	47. (1)			

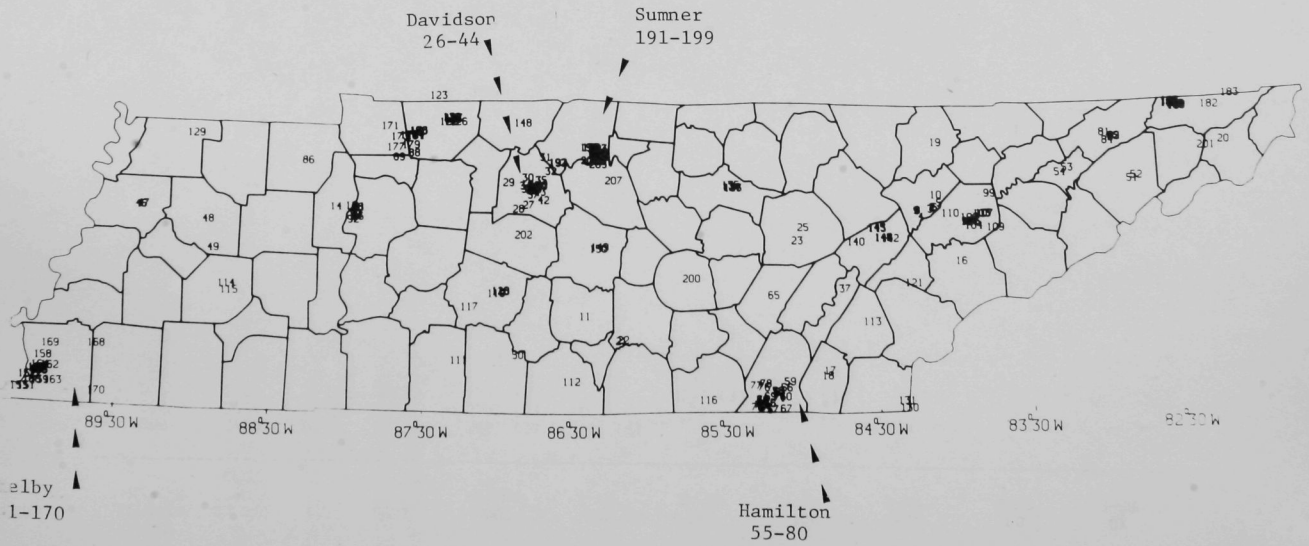


Fig. IV.102. Tennessee: Locations of SAROAD Monitors (See Table IV.17 for Monitor Numbers)

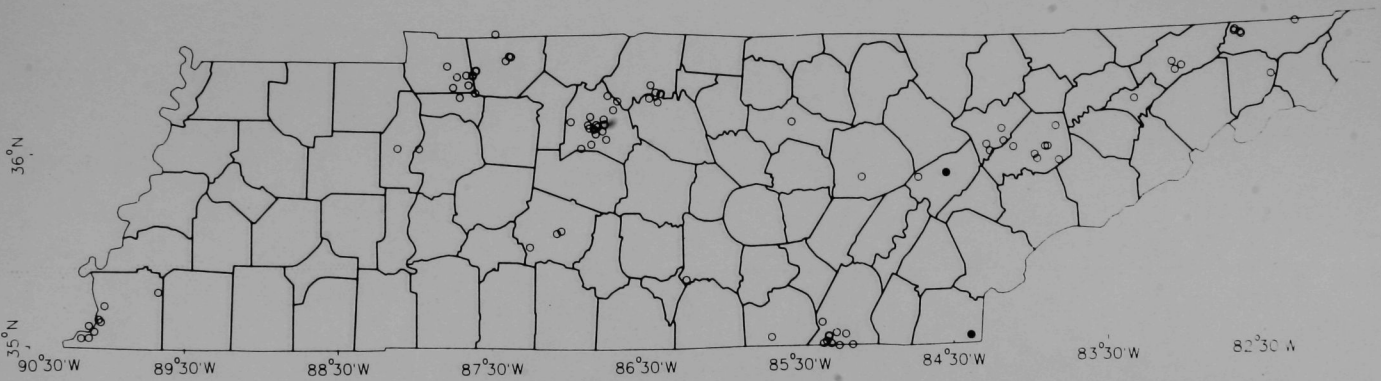


Fig. IV.103. Tennessee: Monitors Reporting Adequate Data on 24-hr Average SO_2; Violations Shown by Shaded Circles

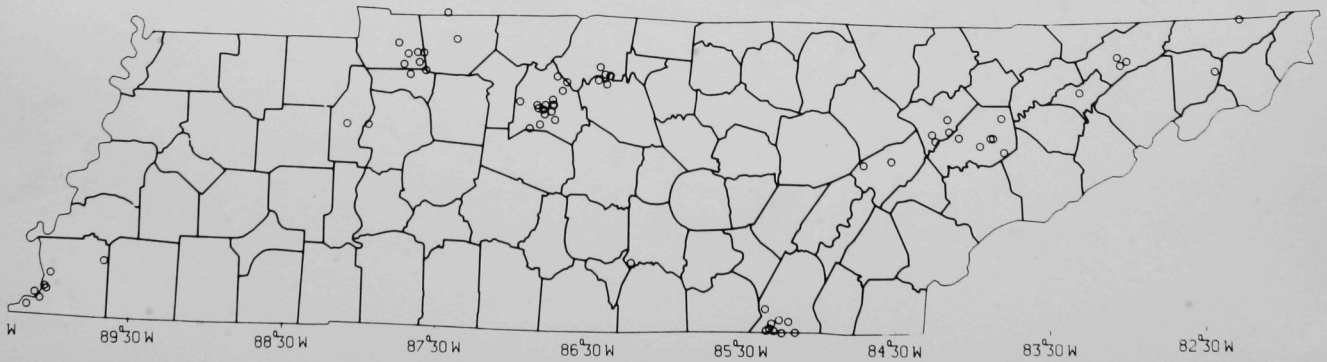


Fig. IV.104. Tennessee: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

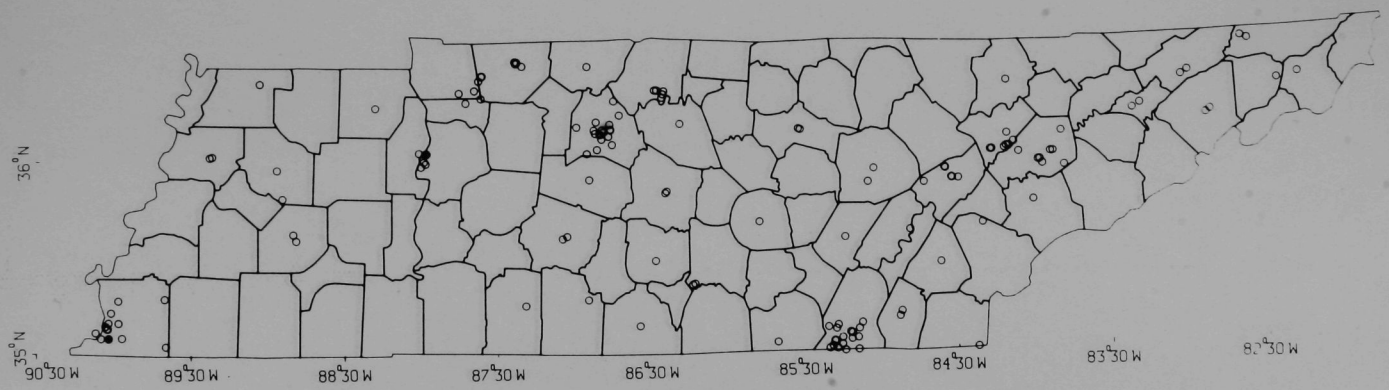


Fig. IV.105. Tennessee: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

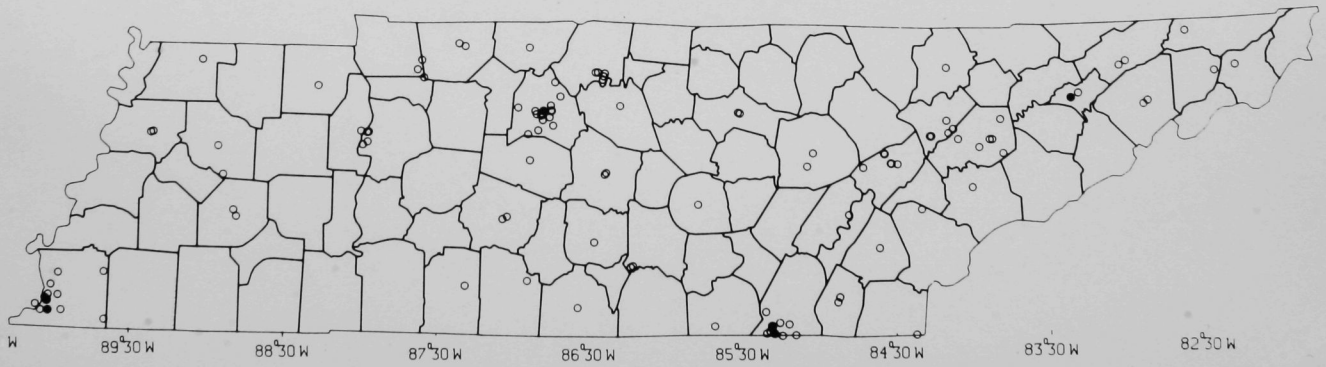


Fig. IV.106. Tennessee: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

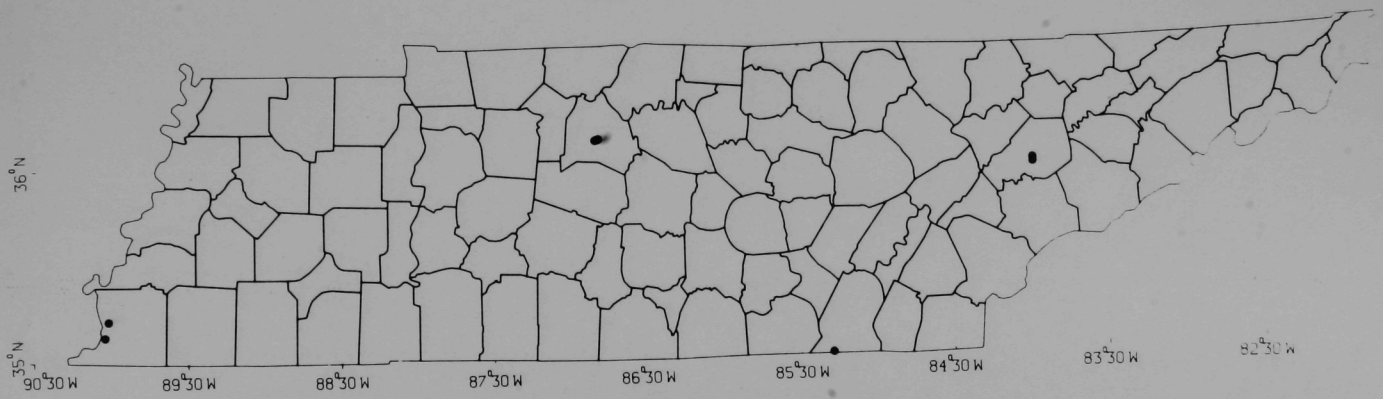


Fig. IV.107. Tennessee: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

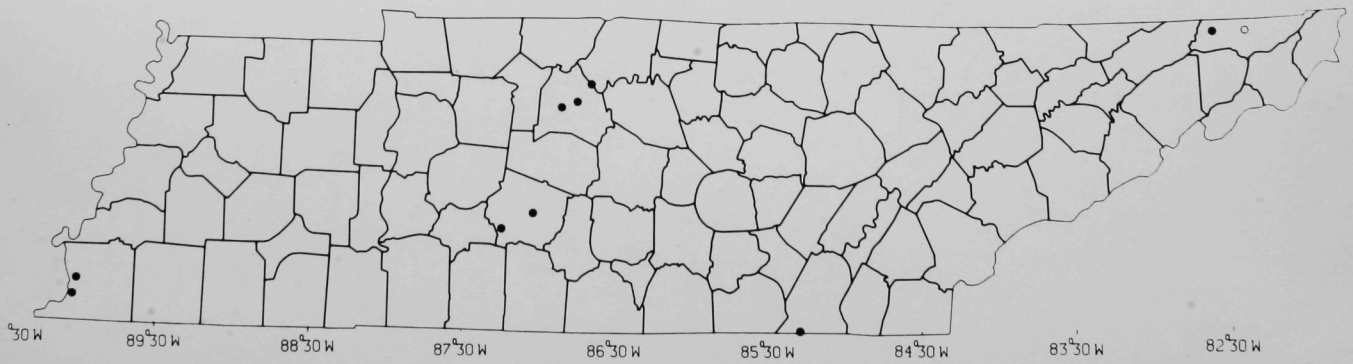


Fig. IV.108. Tennessee: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

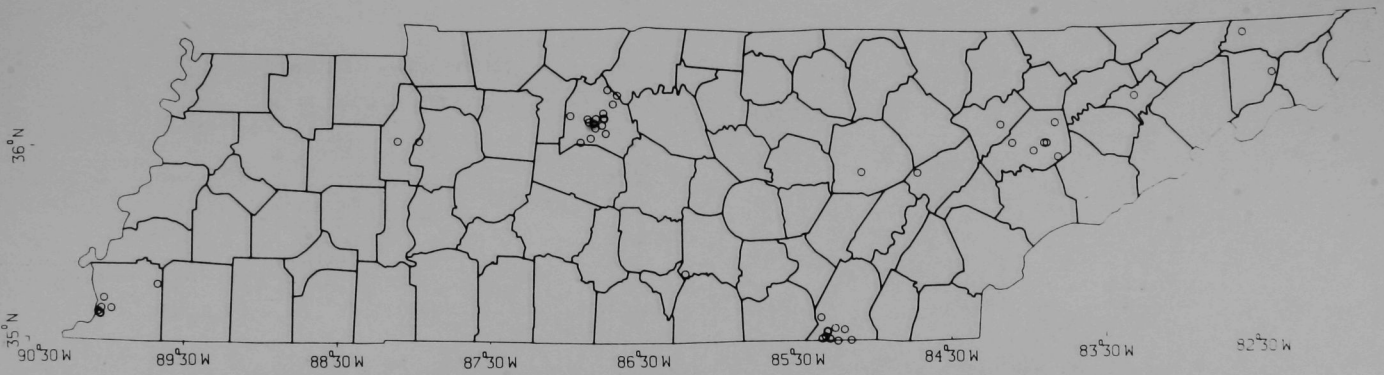


Fig. IV.109. Tennessee: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table IV.18. Tennessee: Power Plant and Fuel Use Data

TENNESSEE POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ALLEN	35.07	90.15	990.00	0.0
2	BULL RUN	36.02	84.16	950.00	0.0
3	CUMBERLAND 1 AND 2	36.39	87.65	2600.00	0.0
4	GALLATIN	36.32	86.46	1065.20	0.0
5	JOHNSONVILLE	36.05	87.99	1265.20	0.0
6	KINGSTON	35.90	84.52	1700.00	0.0
7	N SEQUOYAH (NUCL)	35.10	85.77	65.60	0.0
8	SEVIER	36.75	82.95	340.50	0.0
9	WATTS BAR	35.61	84.76	260.00	0.0
10	N WATTS BAR (NUCL)	35.61	84.95	124.50	0.0

N NUCLEAR * NOT PLOTTED

TENNESSEE FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ALLEN	3.13	1603.40	0.40	3.99	0.0
2	BULL RUN	0.93	1928.10	0.39	49.24	0.0
3	CUMBERLAND 1 AND 2	3.77	3932.90	0.59	97.32	0.0
4	GALLATIN	3.55	1516.90	0.20	10.49	0.0
5	JOHNSONVILLE	3.44	2401.50	0.14	16.73	0.0
6	KINGSTON	2.31	4304.50	0.40	25.92	0.0
7	N SEQUOYAH (NUCL)	0.0	0.0	0.0	0.0	0.0
8	SEVIER	1.89	2116.50	0.20	6.85	0.0
9	WATTS BAR	3.57	516.00	0.50	1.76	0.0
10	N WATTS BAR (NUCL)	0.0	0.0	0.0	0.0	0.0

N NUCLEAR * NOT PLOTTED

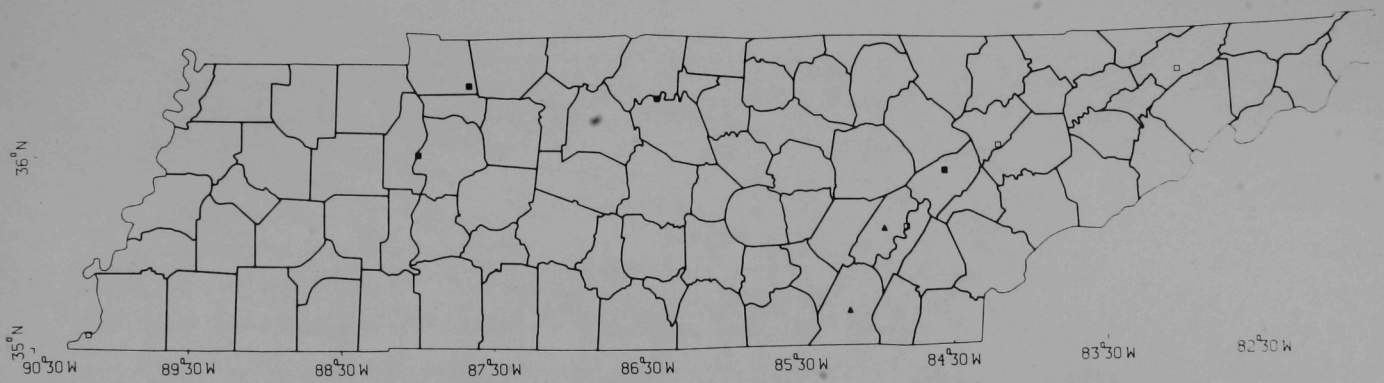


Fig. IV.110. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000 MW; Open, <1000 MW. Triangle = Nuclear)

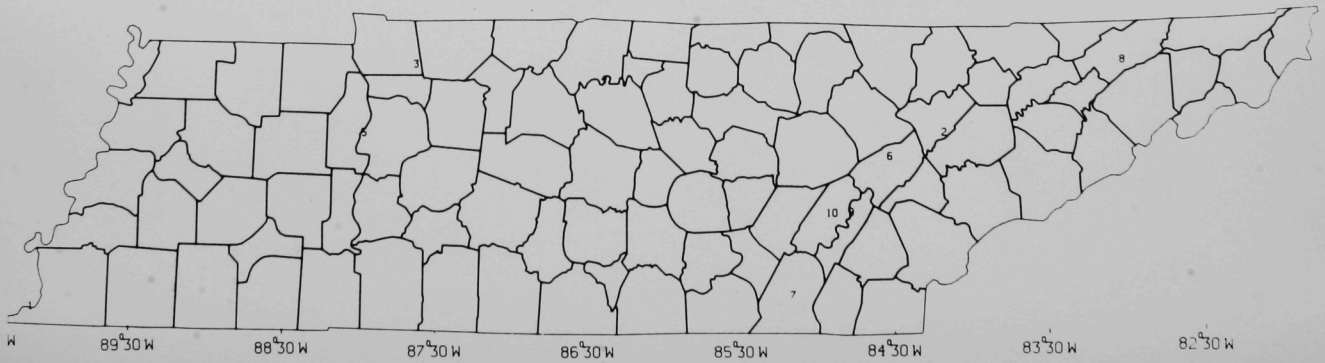


Fig. IV.111. Power Plant Key (See Table IV.18 for Identification and Fuel Use Data)

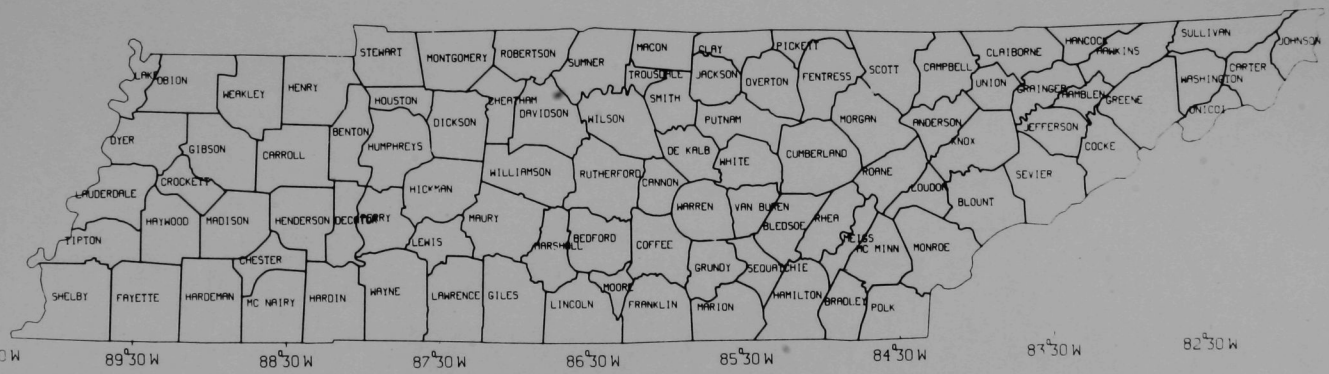


Fig. IV.112. Tennessee: Key to Counties

Federal Region VI
Covering the States of:

Arkansas

Louisiana

New Mexico

Oklahoma

Texas

REGION VI: ARKANSAS

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	19	0
	1 yr			15	0
TSP	24 hr	0[b]	0	55	4
	1 yr			42	5
NO_x	1 yr	0[b]	-	1	0
CO	8 hr	0[b]	-	0[b]	0
O_x	1 hr	1	-	0[b]	0

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	8
Nuclear	1
Total	9

ARKANSAS: Official SIP, 4/79

I. SOURCES OF THE PROBLEM

Arkansas has only one nonattainment area, Pulaski County, which surrounds Little Rock. Pulaski County is in nonattainment for ozone only. Mobile sources contribute heavily to the oxidant problem, whereas stationary sources make a lesser but significant contribution.

II. ATTAINMENT STRATEGIES

A. O_x

1. Pulaski County

a. Projected to attain the new ozone standard of 0.12 ppm by use of:

- the Federal Motor Vehicle Emissions Control Program
- RACT for stationary sources (gasoline storage and marketing facilities; petroleum liquid storage units)
- reduction in cutback asphalt use

III. NEW SOURCE REVIEW

Arkansas will use an emissions offset policy based on EPA regulations. Major new sources of hydrocarbon precursors to ozone locating in or near Pulaski County will have to attain the Lowest Achievable Emission Rate, and must obtain offsetting emissions from anywhere within 72 miles of the North Little Rock Municipal Airport.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. No general limits on existing sources

B. TSP

1. No general SIP limit

2. Source-specific requirements, such as

- the Arkansas Power and Light White Bluff plant: electrostatic precipitators to limit emissions to 1,667 lb particulate matter per hr
- the Southwestern Electric Gentry coal-fired boiler: limited to 516 lb particulate matter per hour

Fig. VI.113. Arkansas: O_X Nonattainment Areas as Designated May 1979

Table VI.19. Arkansas: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	40	34.59	91.57			115. (1)	41. (1)			
2	40	34.49	91.56			162. (1)	68. (2)			
3	40	34.51	91.54			358. (4)	151. (4)			
4	40	34.51	91.56			312. (3)	117. (4)			
5	40	34.50	91.57			227. (2)	91. (3)			
6	80	33.13	91.96			151. (1)	60. (2)			
7	120	36.33	92.33			115. (1)	57. (2)			
8	160	36.33	94.13			109. (1)	56. (1)			
9	220	36.23	93.11	9. (1)	4. (1)	137. (1)	54. (1)			
10	380	34.12	93.05			114. (1)	47. (1)			
11	480	33.27	93.25			184. (1)	54. (1)			
12	540	35.84	90.71			148. (1)	69. (2)			
13	560	35.44	94.35			470. (4)				
14	560	35.44	94.35			71. (1)				
16	580	35.15	90.15	16. (1)	4. (1)	114. (1)	58. (2)			
17	580	35.13	90.23			198. (2)	91. (3)			
18	580	35.15	90.18	7. (1)	3. (1)	139. (1)	69. (2)			
20	580	35.10	90.19	59. (1)						
21	580	35.27	90.46	12. (1)	3. (1)	149. (1)	74. (2)			
22	700	33.89	91.49			1000. (4)				
23	700	33.89	91.49			98. (1)				
24	840	35.09	92.44			147. (1)	69. (2)			
25	980	34.51	93.05			118. (1)	46. (1)			
26	980	34.51	93.05			118. (1)	46. (1)			
27	1020	36.05	90.49			121. (1)	61. (2)			
28	1100	33.67	93.59			131. (1)	52. (1)			
29	1100	33.67	93.59			191. (1)	62. (2)			
30	1280	34.44	92.07			106. (1)	41. (1)			
31	1280	34.40	91.98	9. (1)	3. (1)	93. (1)	38. (1)			
32	1280	34.31	91.84	8. (1)	3. (1)	199. (2)	47. (1)			
33	1280	34.44	92.07	13. (1)	3. (1)					
34	1280	34.25	92.06	3. (1)		119. (1)				
35	1280	34.20	92.00	3. (1)		109. (1)				
37	1280	34.22	92.01	11. (1)	3. (1)	104. (1)	48. (1)			
38	1500	34.54	92.01	9. (1)	3. (1)	100. (1)				
39	1680	33.43	94.04	3. (1)	3. (1)	165. (1)	47. (1)			
40	1680	33.43	94.06			76. (1)				
42 *	1700	35.93	83.90	13. (1)	3. (1)	154. (1)	68. (2)			
44	1760	34.65	93.82			42. (1)				
46	1900	33.59	92.83			126. (1)	42. (1)			
47	2000	34.53	90.59			166. (1)	74. (2)			
48	2160	35.28	93.14			121. (1)	63. (2)			
49	2220	34.76	92.21			131. (1)	70. (2)			

Table VI.19. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
50	2220	34.73	92.24	13. (1)	3. (1)	129. (1)	57. (2)			
51	2220	34.74	92.28	6. (1)		89. (1)	59. (2)			
53	2220	34.87	92.12			111. (1)	51. (1)			
54	2300	35.01	90.79			175. (1)	77. (3)			
55	2320	34.61	92.49			183. (1)	60. (2)			
56	2400	35.40	94.40			127. (1)				
57	2400	35.34	94.37			87. (1)				
58	2400	35.39	94.41	3. (1)	3. (1)	159. (1)	61. (2)			
59	2400	35.37	94.36			96. (1)				
60	2400	35.39	94.39			103. (1)				
62	2440	36.32	91.49			100. (1)	50. (1)			
63	2600	33.21	92.67	22. (1)	6. (1)			29. (1)		
64	2600	33.21	92.67	43. (1)	6. (1)	153. (1)	47. (1)			
65	2700	36.05	94.16			114. (1)	56. (1)			
66	2700	36.10	94.14			118. (1)	62. (2)			

Fig. VI.114. Arkansas: Locations of SAROAD Monitors (See Table VI.19 for Monitor Numbers)

Fig. VI.115. Arkansas: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

Fig. VI.116. Arkansas: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

Fig. VI.117. Arkansas: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

Fig. VI.118. Arkansas: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

Fig. VI.119. Arkansas: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table VI.20. Arkansas: Power Plant and Fuel Use Data

ARKANSAS POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	BAILEY	35.26	91.36	120.00	0.0
2	COUCH	33.36	93.47	187.00	0.0
3	FITZHUGH	35.46	93.00	59.84	0.0
4	LAKE CATHERINE	34.43	92.90	756.50	0.0
5	LYNCH	34.75	92.28	250.00	0.0
6	MCCLELLAN 1	33.57	92.79	136.00	0.0
7	MOSES	34.98	93.87	133.00	0.0
8	N NUCLEAR ONE	35.44	93.03	836.00	0.0
9	* RITCHIE	0.0	0.0	904.00	0.0

N NUCLEAR * NOT PLOTTED

ARKANSAS FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	BAILEY	0.0	0.0	2.80	109.60	776.40
2	COUCH	0.0	0.0	1.09	37.65	4623.60
3	FITZHUGH	0.0	0.0	2.69	96.60	302.25
4	LAKE CATHERINE	0.0	0.0	1.01	799.39	9140.66
5	LYNCH	0.0	0.0	0.19	134.43	2411.96
6	MCCLELLAN 1	0.0	0.0	2.80	381.40	33.60
7	MOSES	0.0	0.0	0.80	170.37	0.0
8	N NUCLEAR ONE	0.0	0.0	0.0	0.0	0.0
9	* RITCHIE	0.0	0.0	0.83	2537.14	14839.91

N NUCLEAR * NOT PLOTTED

Fig. IV.120. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open, <1000 MW. Triangle = Nuclear)

Fig. VI.121. Power Plant Key (See Table VI.20 for Identification and Fuel Use Data)

Fig. VI.122. Arkansas: Key to Counties

REGION VI: LOUISIANA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	23	0
	1 yr			12	0
TSP	24 hr	0[b]	0	35	0
	1 yr			20	1
NO_x	1 yr	0[b]	-	12	0
CO	8 hr	0[b]	-	2	0
O_x	1 hr	6	-	5	4

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	28
Nuclear	0
Total	28

LOUISIANA: Official SIP, 4/79

I. SOURCES OF THE PROBLEM

Louisiana has nonattainment areas only for ozone. There are no nonattainment areas for TSP or SO_2, partly because natural gas rather than coal is used in industry. Nineteen parishes (the equivalent of counties) are not attaining the ozone standard, due largely to the volatile organic compounds (hydrocarbons) that are emitted from petroleum refining, storage and distribution. In Baton Rouge, stationary sources represent 59% of VOC emissions; mobile sources (vehicles) 26%. In New Orleans, refineries, petrochemical plants, and other large stationary sources emit 43% of VOC and vehicles emit 34%, with minor point sources responsible for the remainder. In Shreveport, 62% of VOC emissions are from mobile sources and 8% are from large stationary sources. There are no areas designated nonattainment for Co or NO_x.

II. ATTAINMEMT STRATEGIES (OZONE ONLY)

A. FEDERAL MOTOR VEHICLE EMISSIONS CONTROL PROGRAM

B. RACT FOR STATIONARY SOURCES OF VOC

1. Incorporate EPA's control techniques guidances
2. Include refineries, storage tanks, solvent degreasers, surface coating plants

C. SCHEDULED TO ATTAIN NAAQS BY DECEMBER 31, 1982

III. NEW SOURCE REIVEW

Louisiana plans to use a growth allowance for new sources of VOC. Scheduled reductions of emissions should be more than adequate for projected growth in Shreveport and New Orleans. A more limited allowance is projected for Baton Rouge, with offsets as a backup.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. New and existing sources: 2000 ppm
2. Exception possible for "small units"

B. TSP

1. New and existing sources
2. 0.6 lb particulate matter per MM Btu

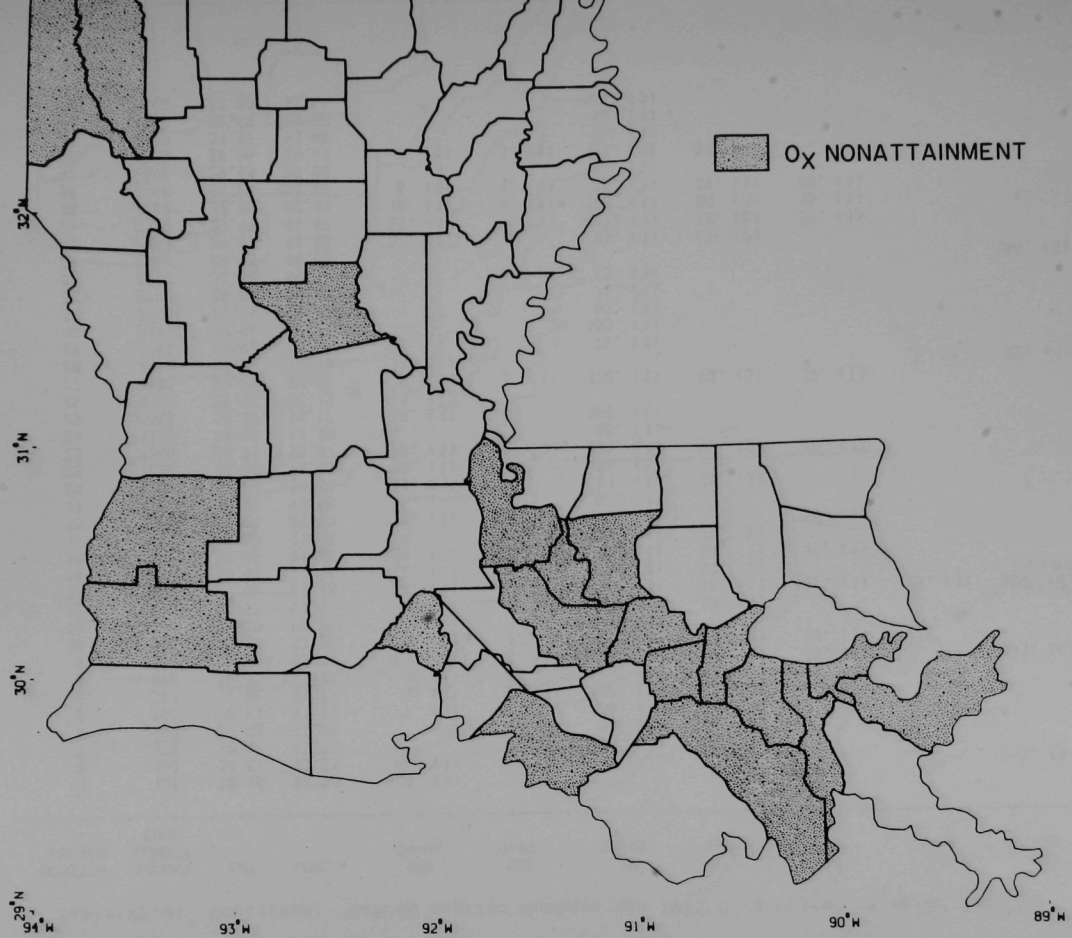


Fig. VI.123. Louisiana: O_X Nonattainment Areas as Designated May 1979

Table VI.21 Louisiana: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	180	30.10	90.98	104. (1)						
2	320	30.81	93.35	80. (1)						249. (4)
3	500	32.42	93.71			71. (1)	40. (1)			
4	500	32.48	93.87			84. (1)	31. (1)			
5	500	32.41	91.19	7. (1)		136. (1)	70. (2)			
6	500	32.48	93.77	8. (1)	3. (1)	208. (2)	70. (2)	36. (1)		
8	520	30.18	93.21	5. (1)	3. (1)	88. (1)	43. (1)	28. (1)		
9	520	30.20	93.21	45. (1)	3. (1)	165. (1)	67. (2)	39. (1)		341. (4)
10	520	30.24	93.26	7. (1)	3. (1)	125. (1)	57. (2)	29. (1)		
11	620	32.80	93.06			80. (1)				
12	640	31.57	91.42			137. (1)	51. (1)			
13	840	30.42	91.18	76. (1)	4. (1)	145. (1)	56. (1)	37. (1)	5. (1)	304. (4)
14	840	30.49	91.16	76. (1)		110. (1)	57. (2)			
15	840	30.49	91.16	101. (1)	23. (1)	99. (1)	54. (1)	45. (1)		
17	860	32.80	91.18			134. (1)	74. (2)			
18	1280	30.20	91.01	8. (1)		180. (1)		30. (1)		
19	1280	30.44	91.45			96. (1)				
20	1280	30.20	91.10	10. (1)		81. (1)	35. (1)			
22	1280	30.20	91.13	10. (1)		86. (1)				
23	1340	29.91	90.07	10. (1)	3. (1)	121. (1)	58. (2)	45. (1)		
24	1340	29.97	90.15			88. (1)				
25	1340	29.97	90.17	8. (1)		109. (1)				
26	1340	29.97	90.15	3. (1)						
27	1520	30.23	92.00	9. (1)	3. (1)	172. (1)	88. (3)	37. (1)		
28 *	2140	29.02	90.10	73. (1)					7. (1)	22. (1)
29	2140	29.90	90.00			79. (1)				
30	2140	29.96	90.20			163. (1)				
31	2140	29.99	90.07			91. (1)				
32	2140	30.02	90.07			76. (1)				
33	2140	30.02	90.10			73. (1)				
34	2140	29.95	90.08							
35	2140	29.95	90.08	27. (1)		93. (1)	67. (2)			184. (3)
36	2140	29.95	90.07	35. (1)	7. (1)	129. (1)	72. (2)	57. (1)		
38	2160	32.50	92.11	16. (1)	4. (1)	142. (1)	58. (2)	16. (1)		
39	2360	31.29	92.47	6. (1)	3. (1)	83. (1)	39. (1)	35. (1)		
40 *	2500	29.93	95.98			136. (1)				
42	2580	30.06	90.61	7. (1)	3. (1)	123. (1)	51. (1)			
43	2700	31.57	93.48			36. (1)				
44	3080	32.64	93.28			62. (1)				
45	3240	31.90	92.64			136. (1)				

Fig. VI.124. Louisiana: Locations of SAROAD Monitors (See Table VI.21 for Monitor Numbers)

Fig. VI.125. Louisiana: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

Fig. VI.126. Louisiana: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

Fig. VI.127. Louisiana: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

Fig. VI.128. Louisiana: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

Fig. VI.129. Louisiana: Monitors Reporting Adequate Data on 8-hr Average CO; No Violations

Fig. VI.130. Louisiana: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

Fig. VI.131. Louisiana: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table VI.22. Louisiana: Power Plant Data

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ALEXANDRIA #2	31.32	92.45	173.70	0.0
2	ARSENAL HILL	32.53	93.76	170.00	0.0
3	BIG CAJUN #1	30.70	91.44	230.00	0.0
4	BONIN	30.24	92.05	85.00	0.0
5	COUGHLIN	30.84	92.26	483.33	0.0
6	HOUMA	29.62	90.70	39.10	0.0
7	LIEBERMAN	32.71	93.96	277.20	0.0
8	LITTLE GYPSY	30.00	90.46	1251.00	0.0
9	LOUISIANA NO. 1	30.50	91.19	256.50	0.0
10	LOUISIANA NO. 2	30.50	91.19	175.00	0.0
11	MARKET STREET	29.93	90.06	96.25	0.0
12	MECHOUD	30.03	89.93	959.25	0.0
13	MINDEN	32.72	93.34	25.00	0.0
14	MONROE	32.52	92.13	165.99	0.0
15	MUNICIPAL	29.71	91.22	33.42	0.0
16	NATCHITOCHES	31.73	93.09	41.90	0.0
17	NELSON	30.23	93.28	982.27	0.0
18	NINEMILE POINT	29.95	90.15	1917.00	0.0
19	OPELOUSAS #2	30.54	92.09	30.00	0.0
20	PATERSON	30.01	90.02	218.25	0.0
21	PAR HOUSE TWO	30.04	89.93	41.00	0.0
22	RODEMACHER	30.25	92.05	42.65	0.0
23	RODEMACHER	31.42	92.70	445.50	0.0
24	RUSTON 3	32.61	92.66	81.00	0.0
25	STERLINGTON	32.71	92.03	292.00	0.0
26	TECHE	29.83	91.54	427.90	0.0
27	WATERFORD	29.90	90.36	890.00	0.0
28	WILLOW GLEN	30.27	91.11	1586.15	0.0

N NUCLEAR * NOT PLOTTED

Table VI.23. Louisiana: Fuel Use Data

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ALEXANDRIA #2	0.0	0.0	0.0	0.0	4931.61
2	ARSENAL HILL	0.0	0.0	0.0	0.0	3783.00
3	BIG CAJUN #1	0.0	0.0	0.75	22.19	10503.49
4	BONIN	0.0	0.0	0.0	0.0	5433.00
5	COUGHLIN	0.0	0.0	0.20	14.62	14631.03
6	HOUMA	0.0	0.0	0.0	0.0	1338.00
7	LIEBERMAN	0.0	0.0	0.70	37.03	9011.00
8	LITTLE GYPSY	0.0	0.0	0.13	35.48	71496.56
9	LOUISIANA NO. 1	0.0	0.0	1.10	1.20	31396.00
10	LOUISIANA NO. 2	0.0	0.0	0.0	0.0	14059.00
11	MARKET STREET	0.0	0.0	0.0	0.0	701.15
12	MICHOUD	0.0	0.0	0.81	2250.68	7402.22
13	MINDEN	0.0	0.0	0.25	15.37	848.63
14	MONROE	0.0	0.0	0.10	487.00	5573.46
15	MUNICIPAL	0.0	0.0	0.0	0.0	1718.59
16	NATCHITOCHES	0.0	0.0	0.14	1.36	1605.87
17	NELSON	0.0	0.0	0.20	520.20	25081.00
18	NINEMILE POINT	0.0	0.0	0.63	302.24	78673.88
19	OPELOUSAS #2	0.0	0.0	0.0	0.0	1307.32
20	PATERSON	0.0	0.0	0.56	339.43	3052.95
21	PWR HOUSE TWO	0.0	0.0	0.0	0.0	1683.02
22	RODEMACHER	0.0	0.0	0.0	0.0	6771.88
23	RODEMACHER	0.0	0.0	0.0	0.0	1414.00
24	RUSTON 3	0.0	0.0	0.10	0.96	1632.66
25	STERLINGTON	0.0	0.0	0.51	99.87	14495.00
26	TECHE	0.0	0.0	0.20	1.03	17680.52
27	WATERFORD	0.0	0.0	0.68	1264.32	1481.90
28	WILLOW GLEN	0.0	0.0	0.50	778.20	30710.00

N NUCLEAR * NOT PLOTTED

Fig. VI.132. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000 MW; Open, <1000 MW. Triangle = Nuclear)

Fig. VI.133. Power Plant Key (See Tables VI.22 and VI.23 for Identification and Fuel Use Data)

Fig. VI.134. Louisiana: Key to Counties

REGION VI: NEW MEXICO

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	5	0	39	1
	1 yr			19	0
TSP	24 hr	6	0	70	6
	1 yr			26	10
NO_x	1 yr	0[b]	-	0[b]	0
CO	8 hr	4	-	11	8
O_x	1 hr	1	-	5	1

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	13
Nuclear	0
Total	13

NEW MEXICO: Official SIP, 1/79

I. SOURCES OF THE PROBLEM

New Mexico designated limited areas of San Juan and Grant counties as in nonattainment for SO_2. In San Juan Co., the Four Corners Generating Station and the San Juan plant are the primary sources of SO_2. In San Juan, the nonattainment areas consist of a circle of 2.5-mile radius around the Four Corners Plant, and portions of Mesa Verde Plateau and Hogback that are above 6,000 feet. The designations were based on modeling, since monitoring data were not available. In Grant County, the SO_2 nonattainment area surrounds the Kennecott Copper smelter near the town of Hurley.

The state designated limited areas in 4 counties as TSP nonattainment areas. Excessive TSP concentrations in Albuquerque (Bernalillo Co.) were the result of fugitive emissions related to mobile sources (unpaved roads, resuspended road dust) and construction activities, in addition to the high levels of natural background dust. In Grant Co., the Kennecott Copper smelter produces fugitive process emissions and dust from unpaved roads that result in violations. Nonattainment areas in Eddy and Rio counties are the result of potash mining and refining operations (crushers, grinders, compactors, and dryers).

Four areas are designated as in nonattainment for CO -- all of Bernalillo Co. (Albuquerque); a portion of downtown Santa Fe (Santa Fe Co.), areas in Las Cruces (Dona Ana Co.), and in Framington (San Juan Co.). All violations are attributed to motor vehicle emissions. The Albuquerque urban area is designated as in nonattainment for ozone, with motor vehicles accounting for 88% of the emissions.

II. ATTAINMENT STRATEGIES

A. SO_2

1. Grant County

a. Overall limit on sulfur emissions of 3,550 lb per hr

b. Capturing fugitive SO_2:

- need a limit of 500 lb/hr
- requires reduction of 90%
- regulation does not require specific numerical limit

c. Offgas scrubbed or treated in sulfuric acid plant

2. San Juan County

a. SO_2 limitation is 0.53 lb per MM Btu at existing Four Corners unit and San Juan #2

- requires 67.5% SO_2 removal
- compliance with existing SIP limitation to be achieved by July, 1979

b. SO_2 limitation is 0.34 lb per MM Btu at San Juan #1, #3 and #4 (new source requirement)

- requires 80% SO_2 removal
- compliance by Dec. 31, 1982

c. No analysis of projected stationary source growth

B. TSP

1. Grant County

a. Limitations on stack emissions at Kennecott smelter

b. Suppression of fugitive TSP at smelter

c. Fugitive dust from roads in the town of Hurley controlled

2. Lea and Eddy Counties

a. Scrub emissions from potash stack

b. Raise stacks to height consistent with good engineering practice

3. Albuquerque

a. Development of control measures for fugitive dust

- road paving, oiling, and cleaning
- regulate construction practices

b. Ask for extension of deadline for submitting plan

c. RACT already in effect on stationary sources

C. O_x

1. Federal Motor Vehicle Emissions Control Program
2. Inspection and maintenance of motor vehicles in Albuquerque and Bernalillo County
3. Replacement of cutback asphalt with water-emulsified asphalt

D. Carbon Monoxide

1. FMVECP
2. Inspection and maintenance of vehicles

III. NEW SOURCE REVIEW

All sources with emissions greater than 25 tons per year are required to have a permit. The SIP did not address new source growth in nonattainment areas in general. An emission offset policy for new sources of particulate matter in Albuquerque will be followed.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing coal-burning sources

   a. Fuel input > 250 MM Btu per hr: 0.53 lb SO_2 per MM Btu

2. New sources

   a. Fuel input > 250 MM Btu per hr: 0.34 lb SO_2 per MM Btu

B. TSP

1. Existing coal-burning sources

   a. Fuel input between 250 and 5000 MM Btu per hr:

      0.05 lb particulate matter per MM Btu, and

      0.04 lb of fine particles (< 10 microns in diameter) per MM Btu

   b. After 12/31/82, sources with fuel input > 5000 MM Btu per hr:

      0.05 lb particulate matter per MM Btu, and

      0.04 lb fine particles per MM Btu

2. New sources

   a. Fuel input > 250 MM Btu per hr:

      0.05 lb particulate matter per MM Btu, and

      0.02 lb fine particles per MM Btu

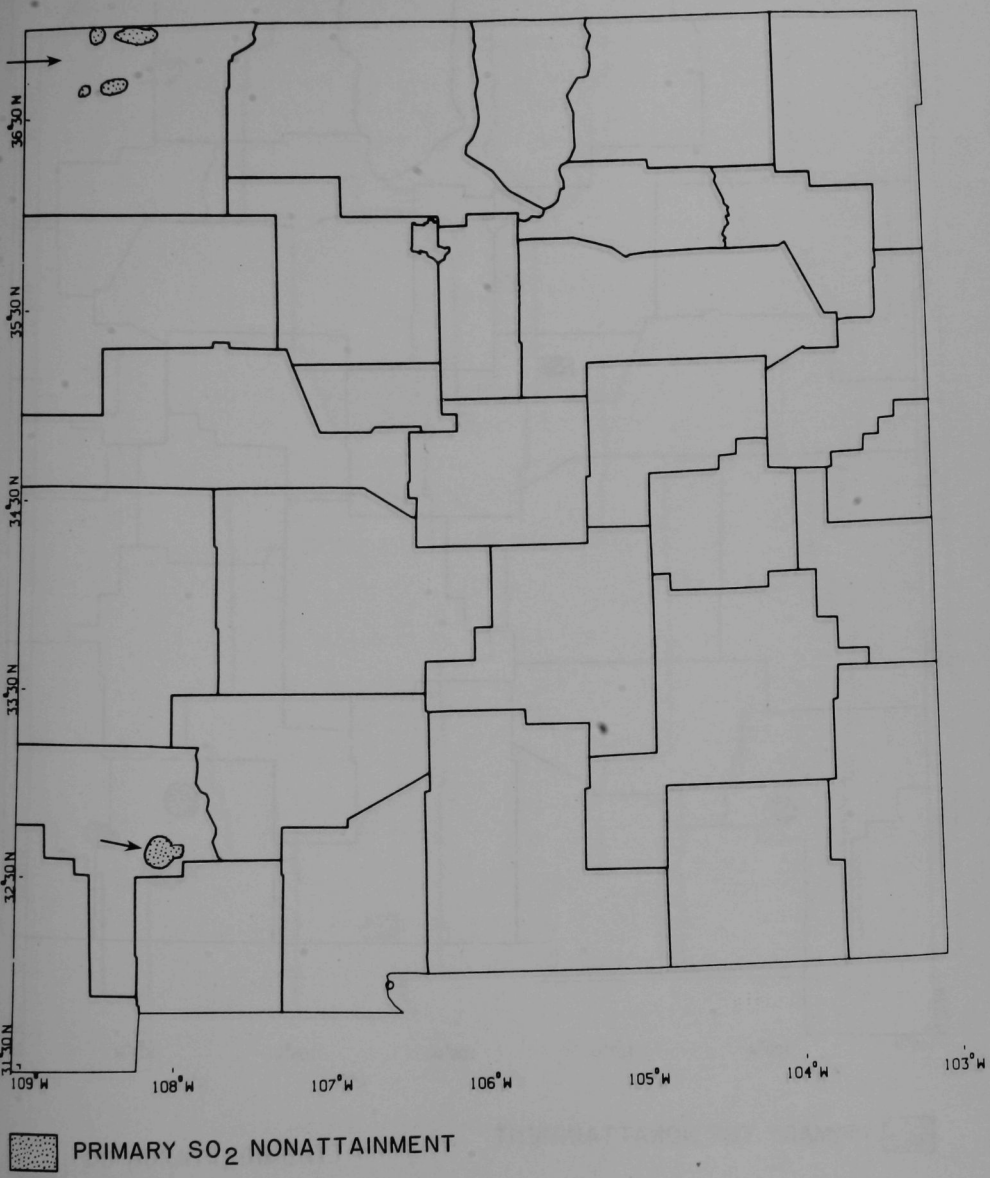


Fig. VI.135. New Mexico: SO_2 Nonattainment Areas as Designated May 1979

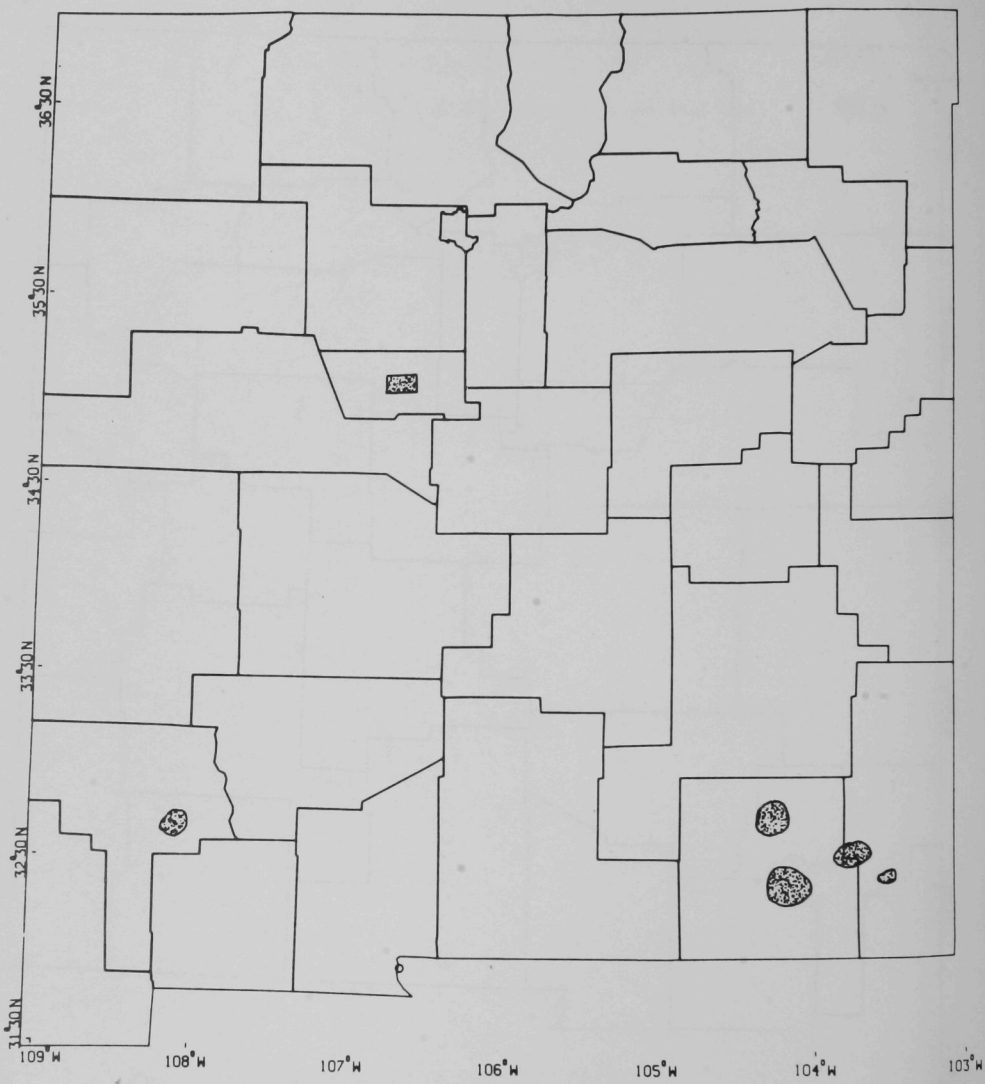
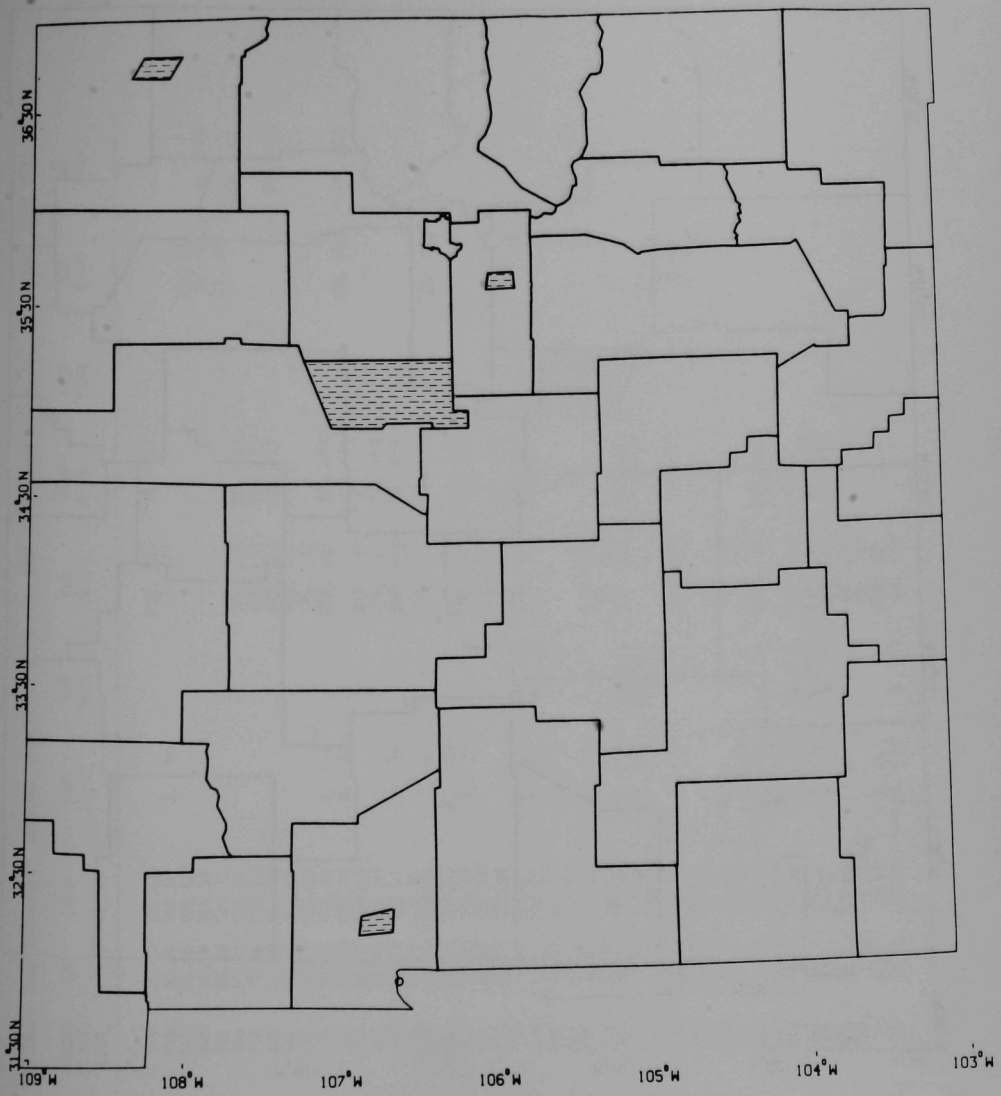


Fig. VI.136. New Mexico: TSP Nonattainment Areas as Designated May 1979



CO NONATTAINMENT

Fig. VI.137. New Mexico: CO Nonattainment Areas as Designated May 1979

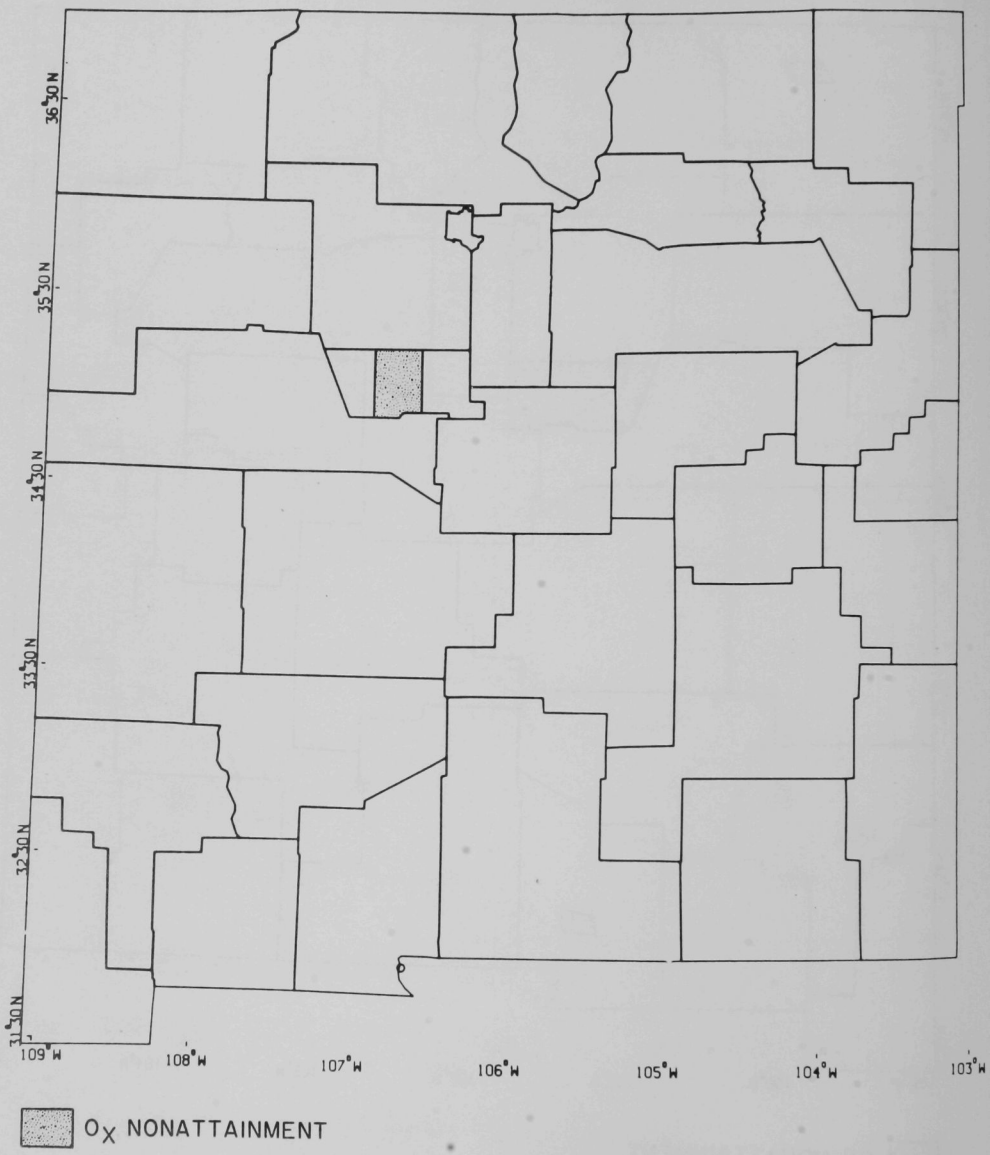


Fig. VI.138. New Mexico: O_x Nonattainment Areas as Designated May 1979

Table VI.24. New Mexico: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
2	140	35.09	106.65			230. (2)	78. (3)			
3	140	35.09	106.64	3. (1)		71. (1)				
5	140	35.08	106.63						22. (4)	
6	140	35.13	106.59						19. (4)	59. (1)
8	140	35.10	106.58						31. (4)	
9	140	35.17	106.58			176. (1)	86. (3)			245. (4)
10	140	35.05	106.62			125. (1)	49. (1)			
11	140	35.08	106.49			198. (2)	40. (1)			53. (1)
12	140	35.05	106.64			133. (1)				
13	140	35.07	106.56			154. (1)				
14	140	35.12	106.64	3. (1)		209. (2)	96. (4)			
15	140	35.09	106.65	3. (1)					25. (4)	147. (2)
16	140	35.07	106.87			122. (1)				
17	140	35.19	106.62			220. (2)	96. (4)			
18	140	34.97	106.70	3. (1)		255. (2)	98. (4)			
19	140	35.07	106.69			423. (4)				
20	200	33.39	104.52						20. (4)	
21	200	33.40	104.47	21. (1)		83. (1)				
22	260	36.91	104.44	3. (1)		105. (1)	46. (1)			
23	280	34.40	103.21			177. (1)				
24	340	32.00	106.60			214. (2)	77. (3)			
25 *	340	31.80	106.54	316. (2)	41. (1)	206. (2)	96. (4)			
26	340	32.00	106.60	58. (1)	8. (1)					
27	340	32.17	106.67	3. (1)						
28	340	31.93	106.63							145. (2)
29	340	32.67	107.15			148. (1)				
30	340	32.07	106.95			93. (1)				
31	340	31.80	106.56	58. (1)	8. (1)	197. (2)	63. (2)			
32 *	340	31.80	106.54	191. (1)	20. (1)					
34	340	32.30	106.76						14. (4)	
35	340	32.31	106.78	3. (1)		341. (4)			9. (2)	
36	340	32.32	106.77						10. (2)	
37	360	32.42	104.23			149. (1)				
38	360	32.42	104.23			59. (1)				
39	360	32.77	104.45	3. (1)		167. (1)				
40	440	32.76	108.13	1483. (4)	42. (1)	278. (3)	103. (4)			
41	440	32.84	108.14	85. (1)						
42	440	32.65	108.10	52. (1)	6. (1)	654. (4)				
43	440	32.70	108.13	45. (1)	6. (1)	245. (2)	89. (3)			
44	440	32.78	108.27	5. (1)	3. (1)	159. (1)	86. (3)			
45	500	35.77	103.96			65. (1)				
46	520	31.83	109.05			28. (1)				
47	520	31.97	108.75	3. (1)		200. (2)				
48	520	31.78	108.50	28. (1)	3. (1)	46. (1)				

Table VI.24. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
49	520	32.26	107.76	5. (1)	3. (1)	149. (1)	57. (2)			
50	640	32.64	103.31	3. (1)		102. (1)				
51	640	32.95	103.35	3. (1)		123. (1)				
52	640	32.17	103.13			77. (1)				
54	640	32.67	103.13	3. (1)		119. (1)				
55	640	32.42	103.20	50. (1)		85. (1)				
56	660	32.93	103.35			126. (1)				
57	720	35.88	106.32			70. (1)	25. (1)			
58	720	35.83	106.19			59. (1)	21. (1)			
59	760	32.63	103.16	3. (1)	3. (1)	105. (1)	66. (2)			
60	780	35.52	108.74			194. (1)				
61	780	35.08	108.84			55. (1)				
62	840	33.07	106.02			120. (1)				
63	840	32.90	105.96			140. (1)				
64	920	36.01	106.06			93. (1)				
65	980	35.30	106.54			146. (1)				
66	1000	36.72	108.22			152. (1)	75. (2)			
68	1000	36.72	108.22	3. (1)	4. (1)					
69	1000	36.73	108.20						15. (4)	
70	1000	36.73	108.21						9. (2)	
71	1000	36.75	108.72	60. (1)	8. (1)	47. (1)				
72	1000	36.83	109.00	23. (1)		64. (1)				
73	1000	36.71	108.50	69. (1)	12. (1)	67. (1)				
74 *	1000	36.98	108.20	7. (1)						
75	1000	36.80	108.69			104. (1)				
76	1000	36.80	108.47	33. (1)	8. (1)	56. (1)	26. (1)			
77	1000	36.80	108.69	3. (1)	3. (1)					
78 *	1000	36.98	108.20	12. (1)		92. (1)				
79	1000	36.69	108.22			118. (1)	32. (1)			
80	1000	36.77	108.38			83. (1)				
81	1000	36.80	108.47	3. (1)	3. (1)					
82	1000	36.37	107.97	5. (1)	3. (1)	145. (1)	41. (1)			
83	1020	35.59	105.23			269. (3)				
84	1060	35.68	105.94			90. (1)	38. (1)			
85	1060	35.66	105.98			75. (1)	39. (1)			
86	1060	35.68	105.95						17. (4)	
87	1060	35.67	105.96			131. (1)	61. (2)			
88	1060	35.68	105.94	3. (1)						
89 *	1080	0.0	0.0			128. (1)				
90	1140	34.06	106.89	79. (1)	13. (1)	70. (1)	34. (1)			
91	1180	36.72	105.60			61. (1)				
92	1180	36.39	105.58			373. (4)				
93	1300	35.17	107.89			173. (1)				

Table VI.24. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
94	1300	34.66	106.77			190. (1)				
95	1300	35.14	107.38			75. (1)				
96	1300	34.86	106.70			222. (2)				

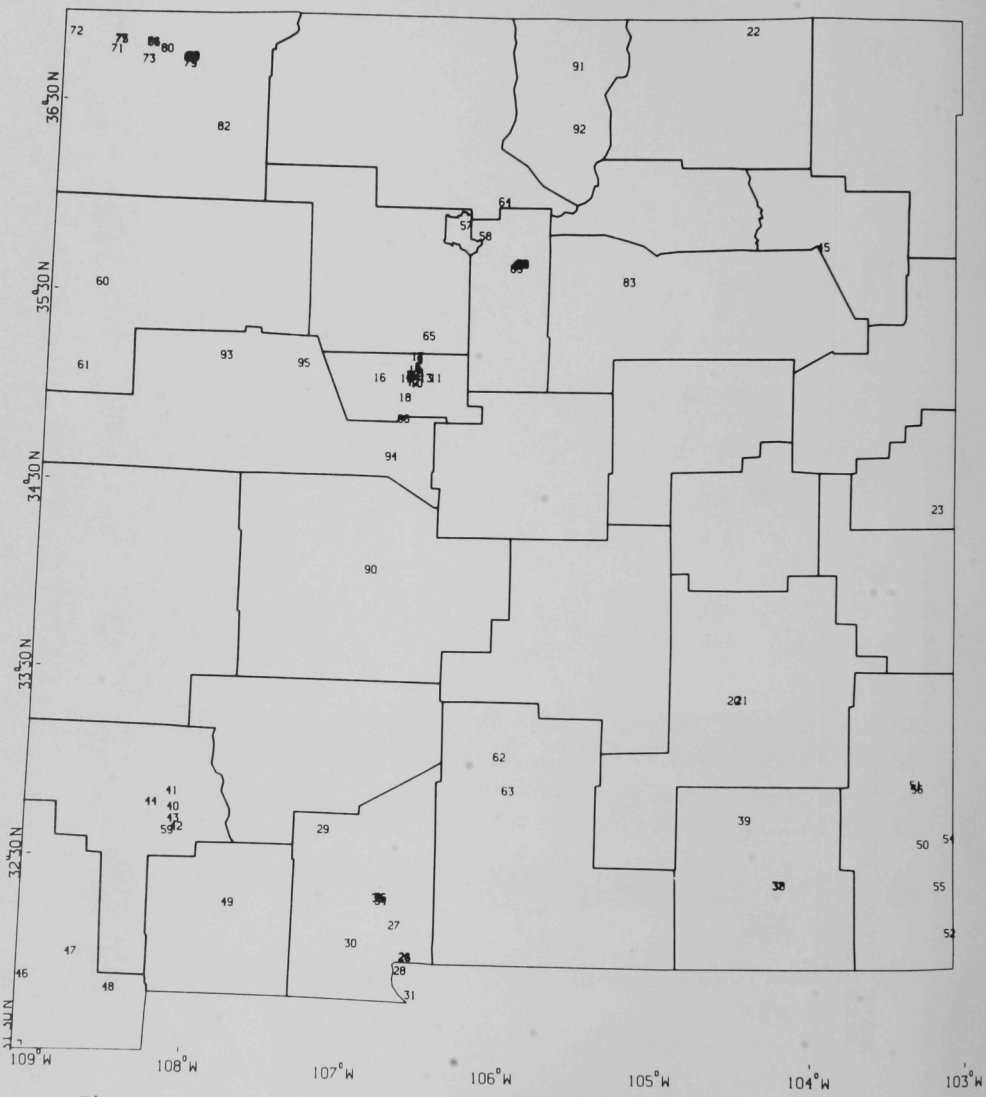


Fig. VI.139. New Mexico: Locations of SAROAD Monitors (See Table VI.24 for Monitor Numbers)

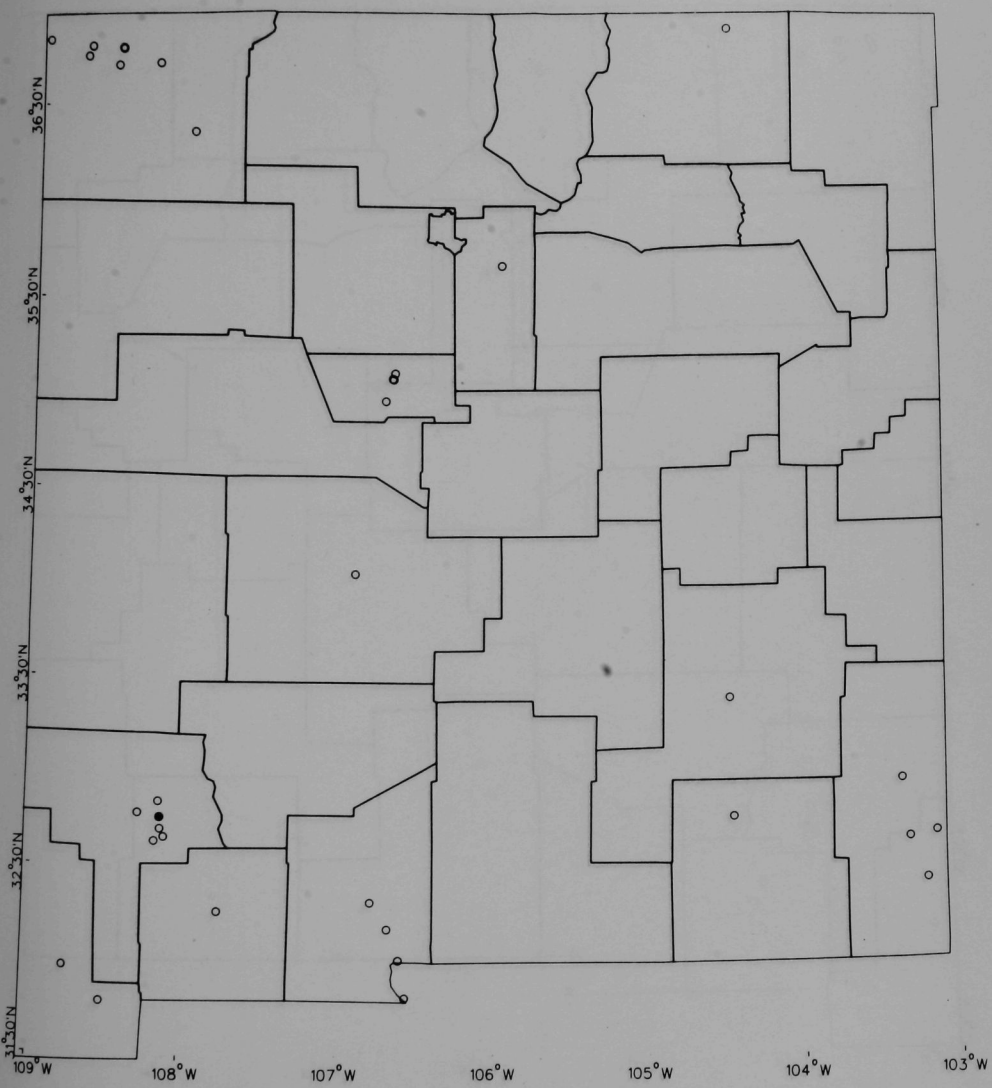


Fig. VI.140. New Mexico: Monitors Reporting Adequate Data on 24-hr Average SO_2; Violations Shown by Shaded Circles

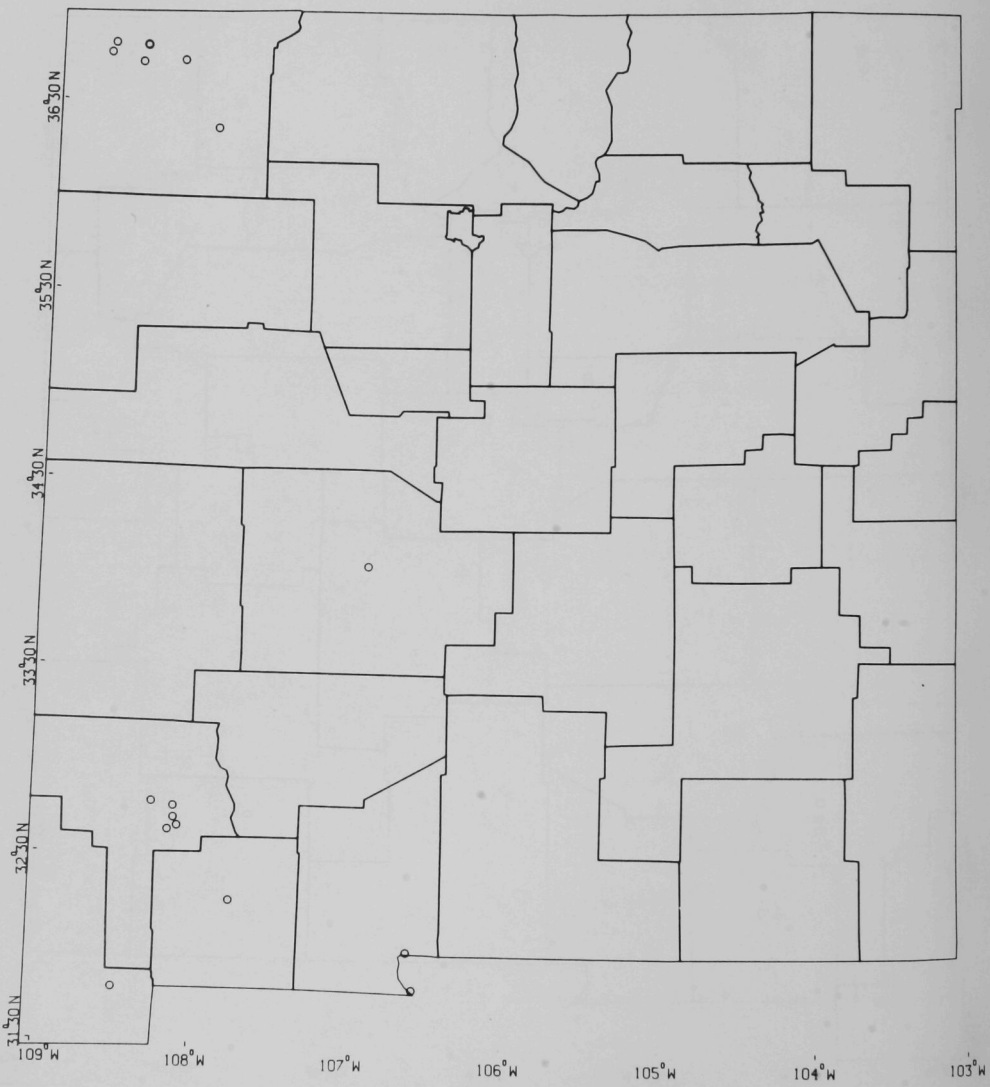


Fig. VI.141. New Mexico: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

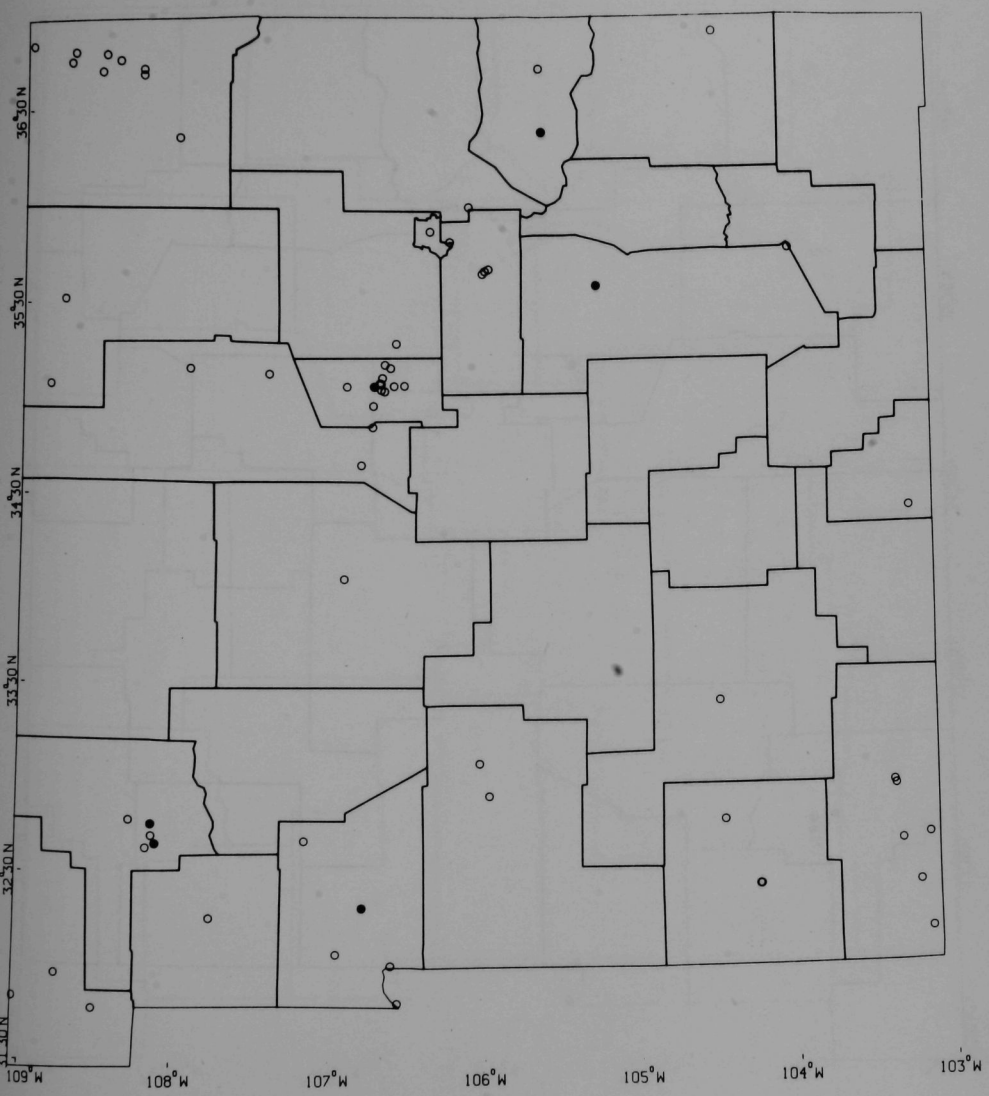


Fig. VI.142. New Mexico: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

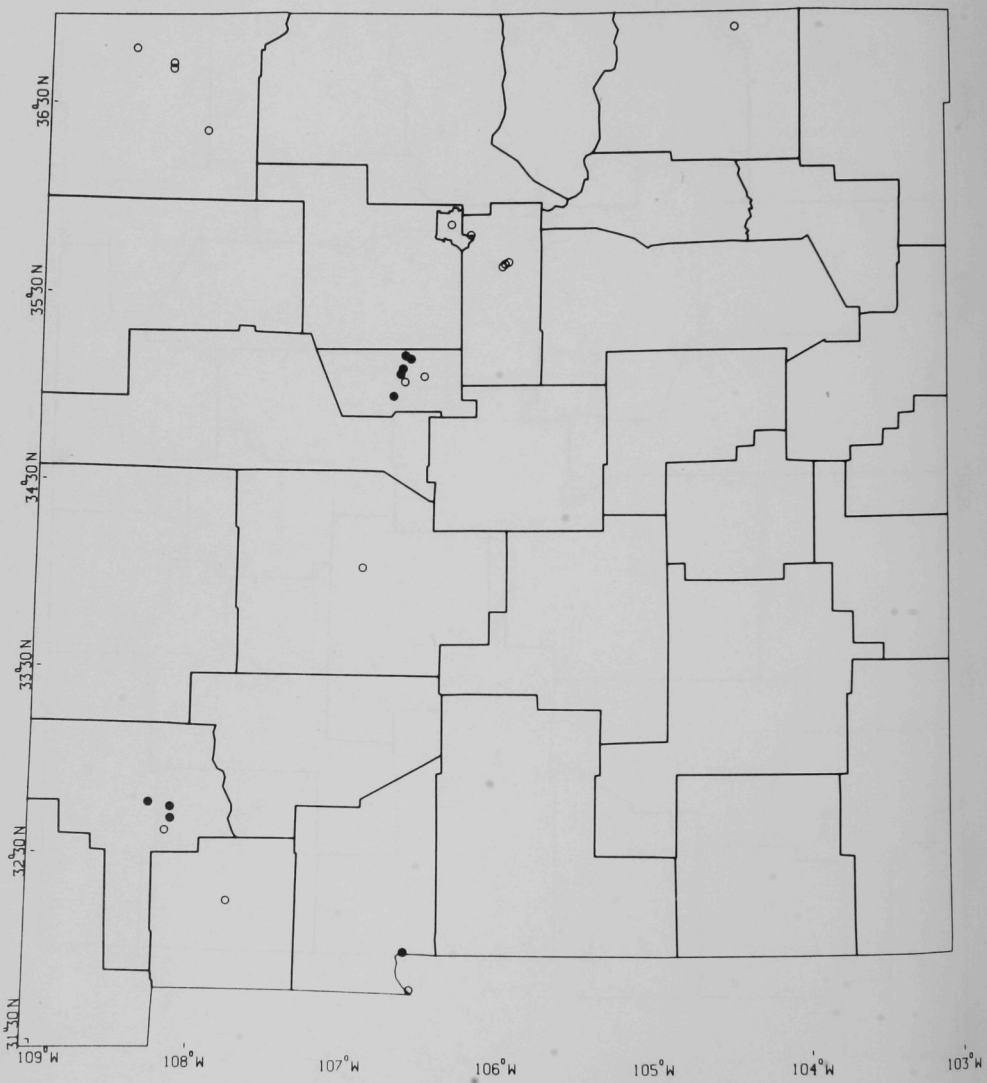


Fig. VI.143. New Mexico: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

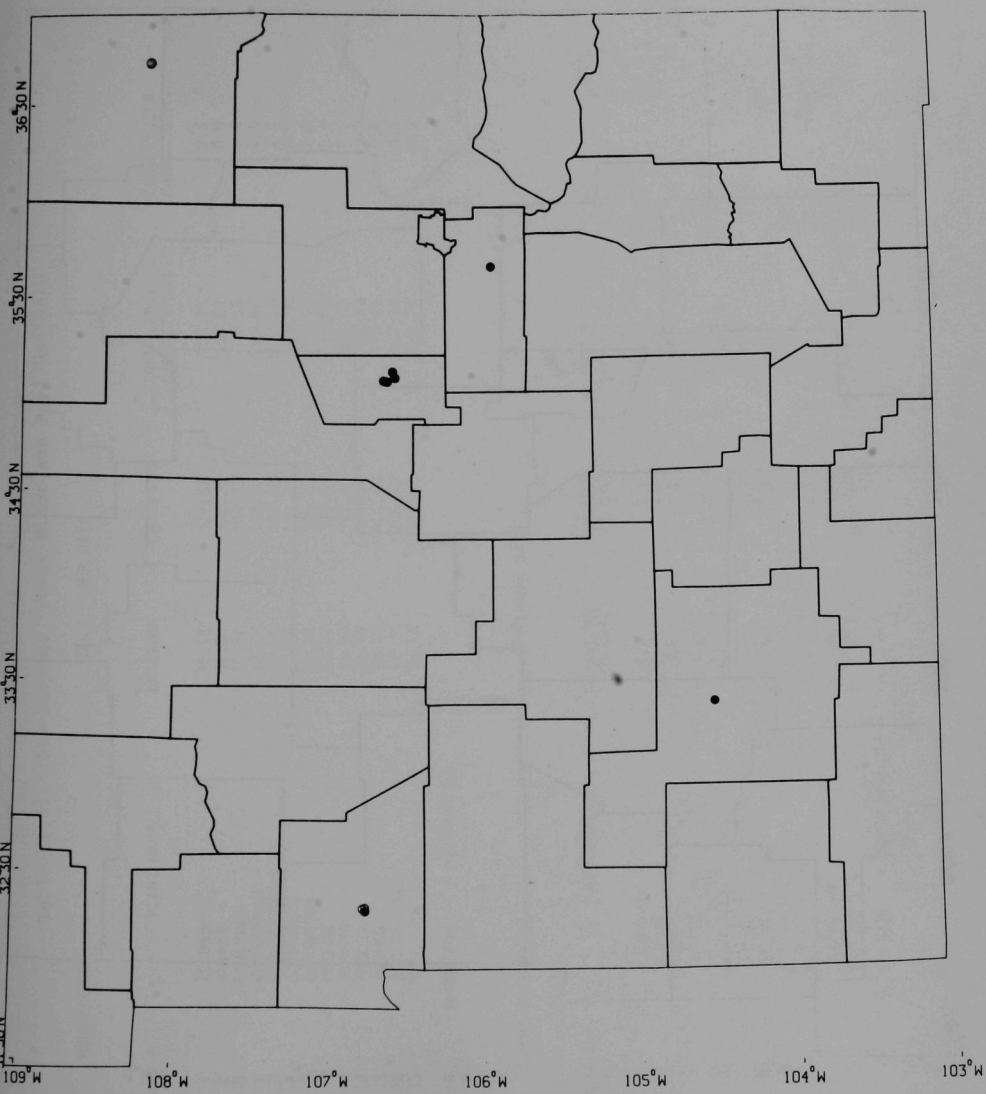


Fig. VI.144. New Mexico: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

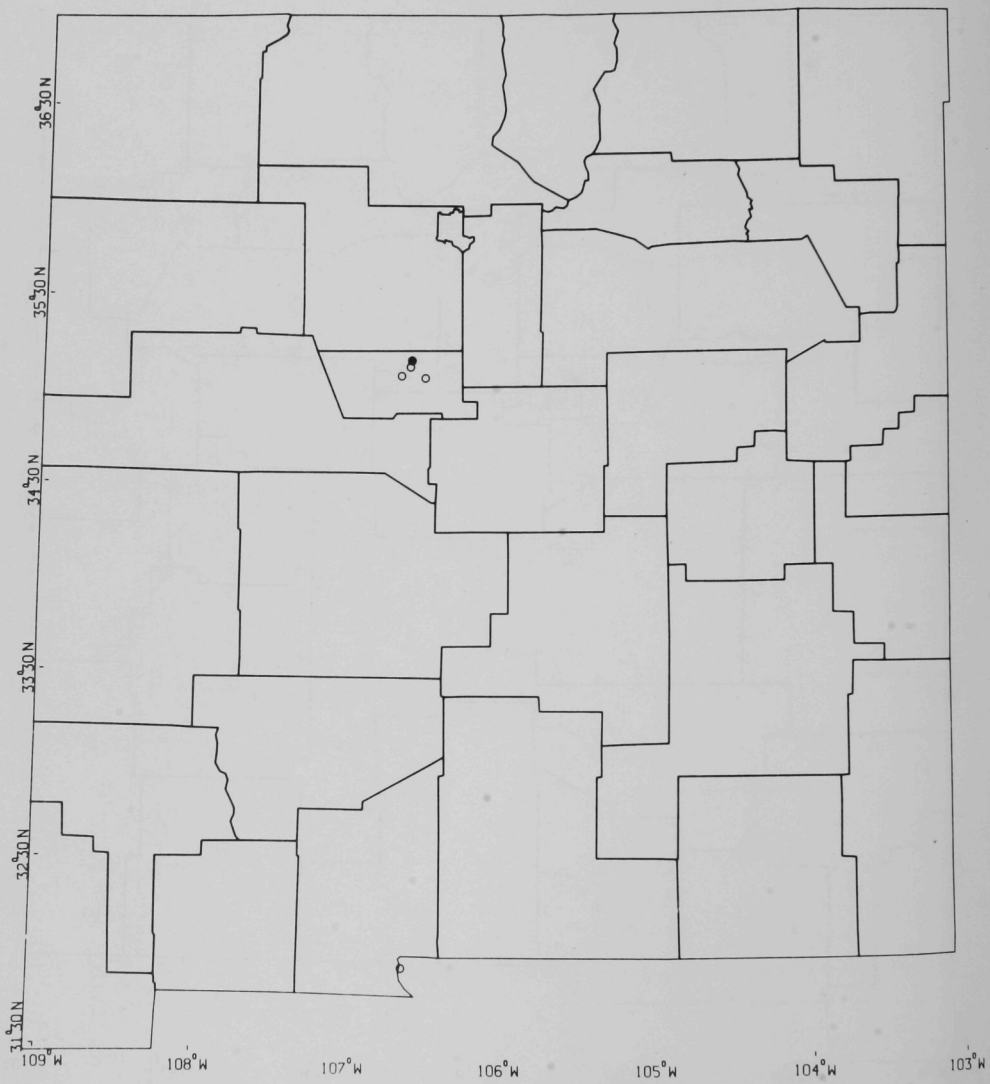


Fig. VI.145. New Mexico: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

Table VI.25. New Mexico: Power Plant and Fuel Use Data

NEW MEXICO — POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ALGODONES	35.68	106.87	51.75	0.0
2	ANIMAS	36.51	108.33	33.00	0.0
3	CARLSBAD	32.50	104.23	44.30	0.0
4	CUNNINGHAM	32.72	103.35	265.40	0.0
5	FOUR CORNERS	36.69	108.48	2212.20	0.0
6	LORDSBURG	32.35	108.71	41.50	0.0
7	LOVINGTON	32.99	103.31	59.60	0.0
8	MADDOX	32.72	103.41	113.60	0.0
9	PERSON	35.03	106.64	125.00	0.0
10	PRAGER	35.10	106.66	35.00	0.0
11	REEVES	35.17	106.60	175.00	0.0
12	RIO GRANDE	31.80	106.55	401.50	0.0
13	SAN JUAN 1	36.70	108.45	328.70	0.0

N NUCLEAR * NOT PLOTTED

NEW MEXICO — FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ALGODONES	0.0	0.0	0.23	23.00	2553.00
2	ANIMAS	0.0	0.0	0.0	0.0	1366.55
3	CARLSBAD	0.0	0.0	0.43	0.03	3817.00
4	CUNNINGHAM	0.0	0.0	0.0	0.0	20030.00
5	FOUR CORNERS	0.51	6073.10	0.0	0.0	879.90
6	LORDSBURG	0.0	0.0	1.00	114.90	1272.25
7	LOVINGTON	0.0	0.0	0.30	1.75	3276.00
8	MADDOX	0.0	0.0	0.0	0.0	5690.38
9	PERSON	0.0	0.0	0.48	49.70	5709.60
10	PRAGER	0.0	0.0	0.50	0.03	222.40
11	REEVES	0.0	0.0	0.78	96.50	11385.70
12	RIO GRANDE	0.0	0.0	0.37	1409.40	4149.00
13	SAN JUAN 1	0.87	1262.20	0.10	8.30	0.0

N NUCLEAR * NOT PLOTTED

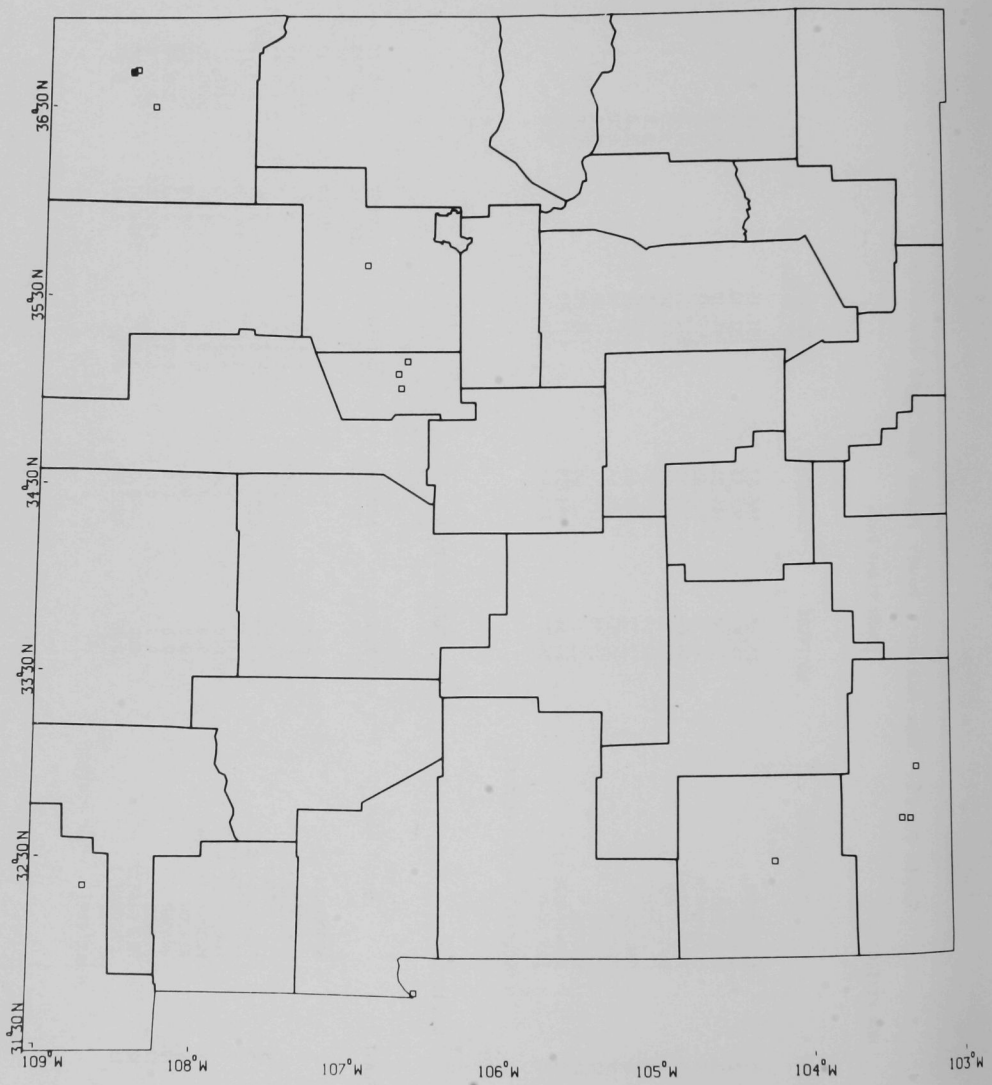


Fig. VI.146. Power Plant Locations (Square = Fossil Fuel: Shaded, $\geq$1000 MW; Open, $<$1000 MW. Triangle = Nuclear)

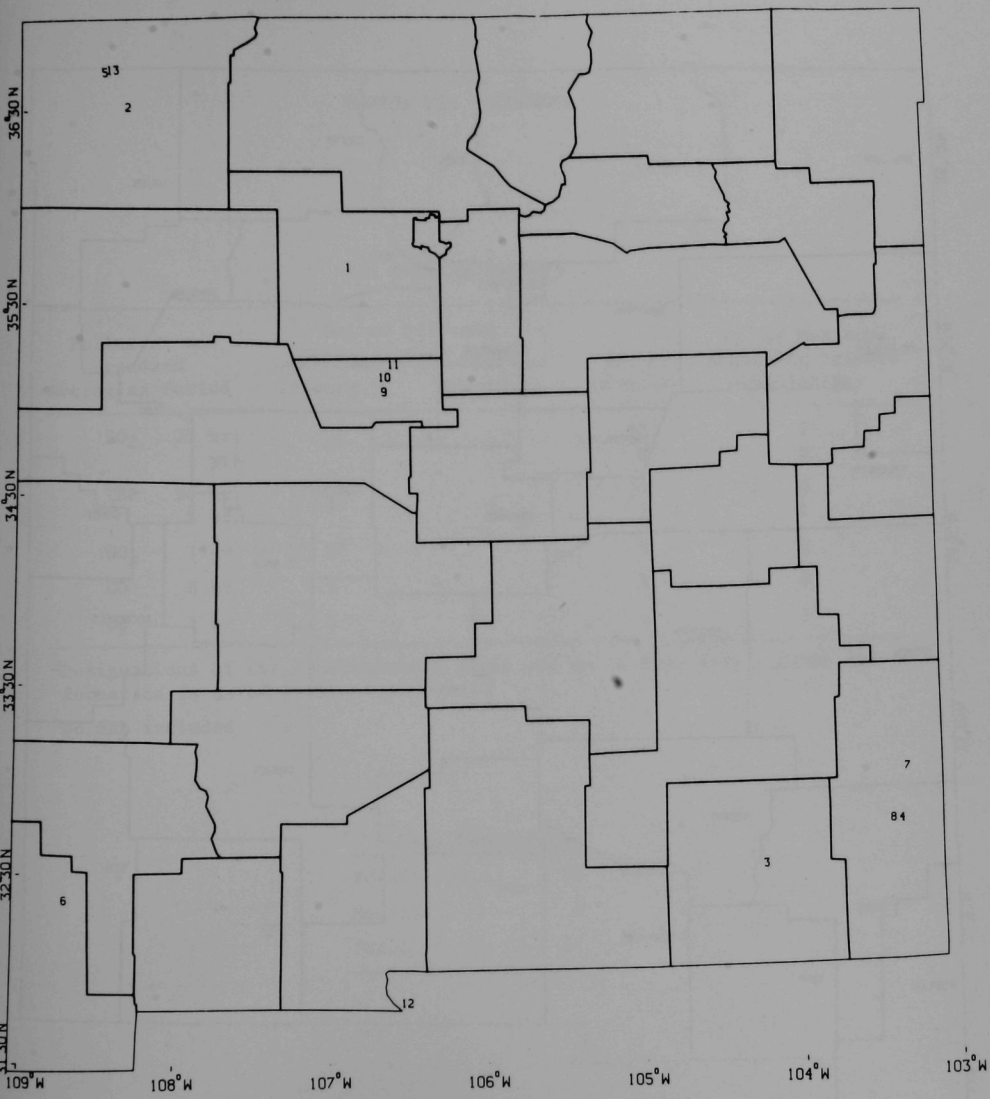


Fig. VI.147. Power Plant Key (See Table VI.25 for Identification and Fuel Use Data)

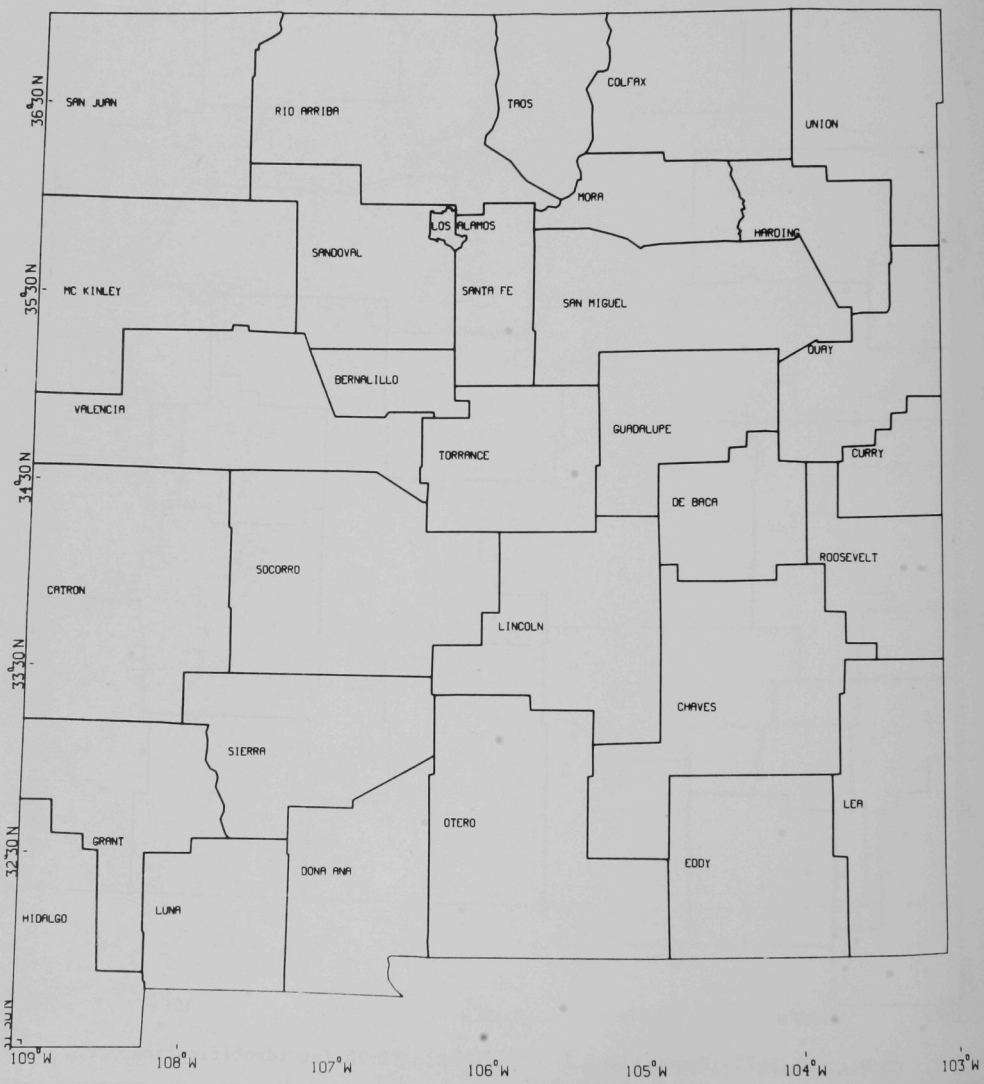


Fig. VI.148. New Mexico: Key to Counties

REGION VI: OKLAHOMA

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a]		No. of Monitors	No. of Monitors Recording Primary Violations
		Primary	Secondary		
SO_2	24 hr	0[b]	0	31	0
	1 yr			2	0
TSP	24 hr	3	1	70	0
	1 yr			1	1
NO_x	1 yr	0[b]	-	3	0
CO	8 hr	1	-	3	0
O_x	1 hr	2	-	4	3

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	16
Nuclear	0
Total	16

OKLAHOMA: Official SIP, 4/79

I. SOURCES OF THE PROBLEM

Portions of Oklahoma, Tulsa, and Mayes Counties have been designated as in nonattainment for the primary TSP standard. In Oklahoma County, 65% of the particulate matter arises from paved or unpaved roads, 12% from open areas and barren land, and another 10% from construction or demolition. In Tulsa County, road dust constitutes 50% of the particulate matter, with 20% from construction or demolition and 14% from open areas and barren land. In Mayes County, roads are responsible for 56%, industrial processes produce 25%, agricultural tilling produces 9%, and 7% comes from open areas or barren land. Oklahoma is trying to determine what effect dust storms have had on concentrations of particulates.

Oklahoma has three counties designated as oxidant nonattainment areas: Oklahoma, Cleveland, and Tulsa, containing the urban centers of Oklahoma City and Tulsa. Under the revised O_x standard, Cleveland County will now be designated as in attainment. The SIP notes that values obtained from rural and remote sampling average around the level of the new standard, but the concentrations cannot be related to any known emission sources. Oklahoma is concerned that its VOC control program (worked out by the rollback method) may be ineffectual because the assumptions in the federal model are wrong. In Tulsa County, stationary sources account for 60% of the VOC emissions, the majority from petroleum refining or storage. In Oklahoma County, stationary sources account for 50% of emissions, with petroleum production and storage and service stations accounting for a little less than half of the stationary source total. Industrial processes, degreasing, cutback asphalt, and other solvent use are the other major sources.

A portion of Tulsa County is also in nonattainment for carbon monoxide. Mobile sources are responsible for 82% of the emissions. There are no SO_2 or NO_x nonattainment areas in the state.

II. ATTAINMENT STRATEGIES

A. TSP

1. Influence of dust storms

a. State reviewing contributions of dust storm days to TSP concentrations

b. May seek redesignation if such data are removed from the averaging

2. Stationary sources

a. RACT already required

b. Samples indicate major industrial activity is not a significant contribution

3. Fugitive dust controls

a. 65% reduction needed for attainment

b. Controls to be developed

- use of water or chemicals in demolition and construction
- watering stockpiles
- covering or wetting open-bodied trucks
- vegetative ground cover

B. O_x

1. Oklahoma and Tulsa Counties

a. RACT for major sources

b. Additional solvent controls

c. Optional inspection and maintenance program (more to provide growth allowance than attainment)

d. FMVECP

2. No strategy for Cleveland County since "design value" from using EPA's "Guideline for Interpretation of Ozone Air Quality Standards" (Jan. 1979) is already below the revised standard

3. Transportation strategies being examined for contribution to growth allowance (or attainment if above strategies are ineffective)

4. Transportation planning will be coordinated

C. CO

1. Tulsa County

a. FMVECP for mobile sources

b. Optional inspection and maintenance to ensure attainment and provide growth allowance

c. Transportation planning will be coordinated and other strategies considered as necessary

III. NEW SOURCE REVIEW

Oklahoma will follow a standard review procedure for major new sources in nonattainment areas. A growth allowance for all three pollutants is projected to be adequate for major new sources. The growth allowance is displayed on a graph in the SIP as the difference between a schedule of reasonable further progress and the line of projected emissions. If the growth allowance for CO and O_x proves to be inadequate, the state would consider a mandatory inspection and maintenace program to achieve additional reductions. Alternatives to a growth allowance for TSP areas were not addressed in the SIP, although the state is committed to a schedule of review for additional controls on nontraditional sources of particulate matter.

IV. EMISSION LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing sources:

a. Limit set in terms of ambient air impact

b. Limit of 0.52 ppm (5-min avg.)
Limit of 0.05 ppm (24-hr avg.)

B. TSP

1. Existing sources:

Fuel input, MM Btu/hr	Emission limit, lb PM per MM Btu
$\leq$ 10	0.6
100	0.35
1,000	0.2
10,000	0.1

Limits interpolated for sources of intermediate size

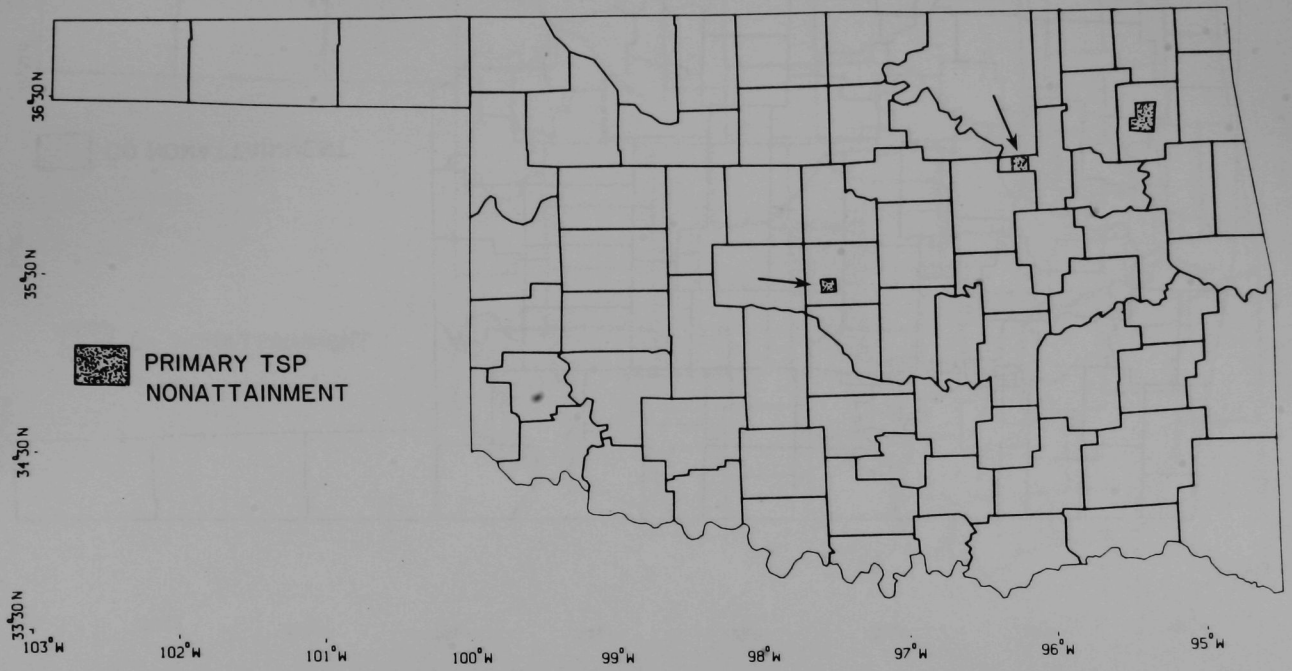


Fig. VI.149. Oklahoma: TSP Nonattainment Areas as Designated May 1979

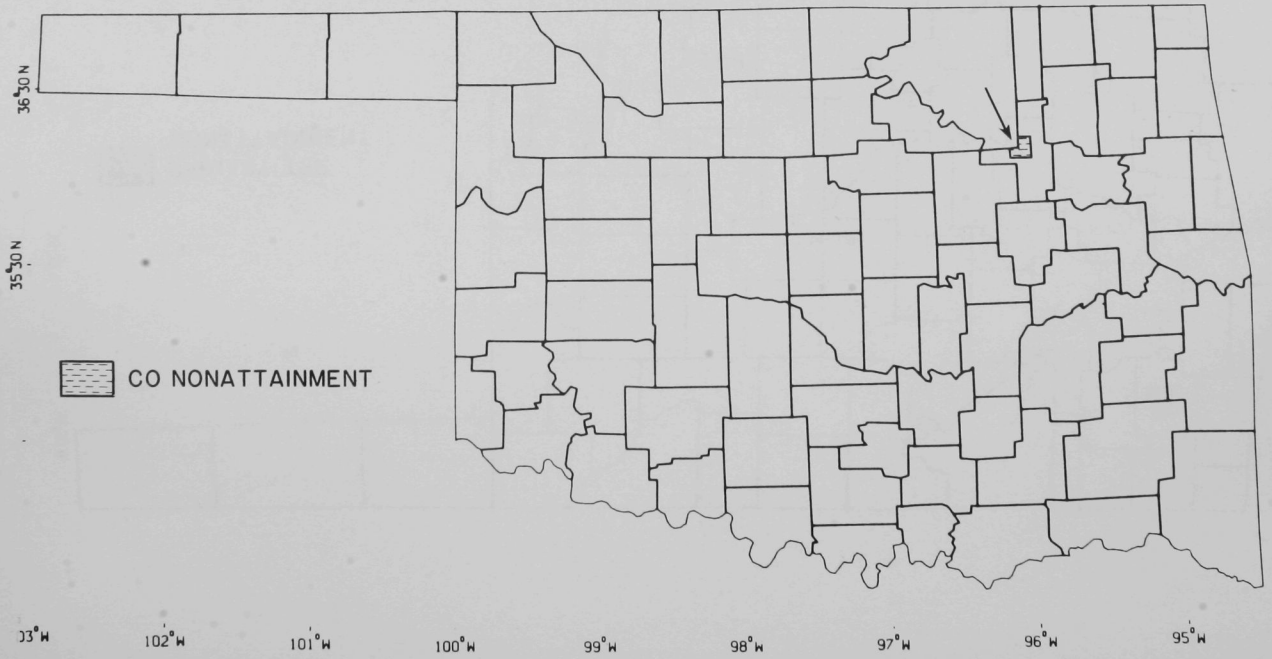


Fig. VI.150. Oklahoma: CO Nonattainment Areas as Designated May 1979

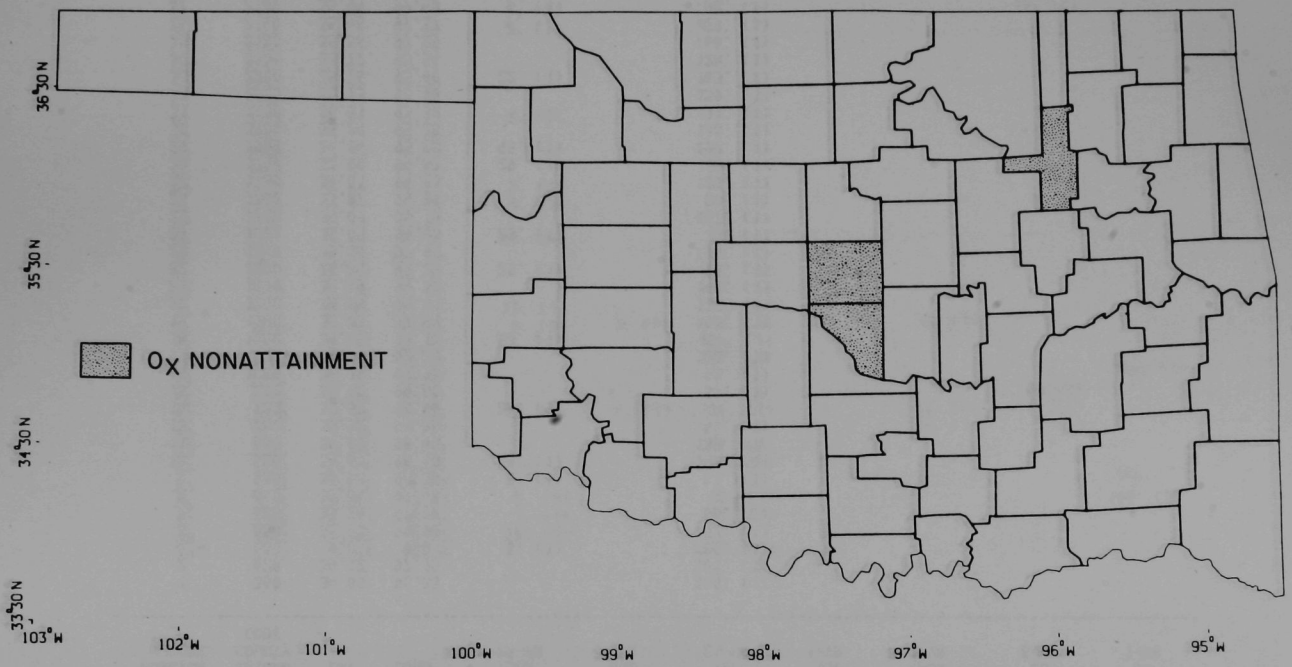


Fig. VI.151. Oklahoma: O_x Nonattainment Areas as Designated May 1979

Table VI.26. Oklahoma: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	360	34.00	96.38			114. (1)				
2	420	34.17	97.15			101. (1)				
4 *	480	0.0	0.0	6. (1)		84. (1)				
6	480	35.93	94.93			57. (1)				
7	600	35.24	97.44			56. (1)				
8	600	35.34	97.48							163. (3)
9	680	34.60	98.36	5. (1)		61. (1)				
10	680	34.61	98.40	25. (1)		147. (1)				
11	680	34.60	98.40			135. (1)				
13	780	35.52	98.96			45. (1)				
14	780	35.51	98.96	25. (1)						
15	800	36.42	94.80			59. (1)				
16	1060	36.39	97.90			92. (1)				
17	1080	34.74	97.22			122. (1)				
18	1080	34.66	97.17	58. (1)						
19	1100	35.08	97.94			105. (1)				
20	1200	34.68	99.91			120. (1)				
21	1440	34.64	99.33			140. (1)				
22	1500	36.80	97.29	25. (1)		91. (1)				
23	1540	35.86	97.93			94. (1)				
24	1620	35.05	94.63	25. (1)		73. (1)				
25	1760	34.01	95.10			107. (1)				
26	1760	33.97	94.99			84. (1)				
27	1760	34.01	94.73			125. (1)				
28	1760	33.90	94.83	29. (1)		66. (1)				
29	1900	36.24	95.28	45. (1)		122. (1)				
30	1900	36.24	95.28			123. (1)				
31	1900	36.31	95.32			141. (1)				
32	2000	35.75	95.40			119. (1)				
33	2000	35.76	95.40	22. (1)		115. (1)				
34	2000	35.77	95.34			124. (1)				
35	2180	35.56	97.29			66. (1)				
36	2180	35.48	97.37			129. (1)				
37	2180	35.44	97.40	5. (1)		92. (1)				
38	2180	35.48	97.48	5. (1)		112. (1)				
39	2180	35.46	97.52			70. (1)				
40	2180	35.46	97.52	5. (1)		224. (2)				
42	2180	35.40	97.63	5. (1)		89. (1)				
43	2180	35.47	97.52	5. (1)		124. (1)				
45	2180	35.47	97.62			144. (1)				
46	2180	35.52	97.51	3. (1)		101. (1)				
48	2180	35.55	97.54							239. (4)
49	2180	35.47	97.52	3. (1)		243. (2)	105. (4)			
50	2180	35.47	97.52	5. (1)		182. (1)				
51	2180	35.39	97.48	5. (1)		85. (1)				

Table VI.26. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
52	2180	35.34	97.37			81. (1)				
53	2180	35.54	97.60			87. (1)				
54	2180	35.48	97.55	5. (1)		158. (1)			10. (2)	
56	2180	35.64	97.43	5. (1)		102. (1)				
57	2180	35.51	97.64			119. (1)				
58	2240	35.61	95.96			72. (1)				
59	2260	36.66	96.33			63. (1)				
60	2360	36.11	97.07			128. (1)				
61	2420	34.94	95.75	3. (1)		81. (1)				
62	2460	34.79	96.66			71. (1)				
63	2500	35.34	96.93			124. (1)				
64	2600	35.61	99.67			165. (1)				
65	2620	36.44	95.71	3. (1)		68. (1)				
66	2740	34.99	96.75	5. (1)		44. (1)				
67	2760	35.51	95.09			122. (1)				
68	2820	34.49	97.96	29. (1)		92. (1)				
69	2920	36.68	101.49			203. (2)				
70	3020	36.16	96.11			152. (1)				
72	3020	36.14	95.92			158. (1)				
74 *	3020	36.14	101.93	13. (1)		95. (1)				
76	3020	36.12	95.86	8. (1)	3. (1)	140. (1)		38. (1)		
77	3020	36.12	95.98			124. (1)				
78	3020	36.19	95.90			162. (1)				
79	3020	36.20	95.97							190. (3)
80	3020	36.15	95.97						8. (2)	
81	3020	36.16	95.98	15. (1)	4. (1)	186. (1)		62. (1)	8. (2)	
82	3020	36.14	95.92					31. (1)		
83	3020	35.94	94.69			87. (1)				
84	3020	35.94	94.69			53. (1)				
85	3020	36.19	95.90							108. (1)
86	3030	35.85	95.31	9. (1)		80. (1)				
87	3140	36.81	95.94	7. (1)		107. (1)				
88	3140	36.80	95.98	25. (1)						
89	3280	36.44	99.39			135. (1)				

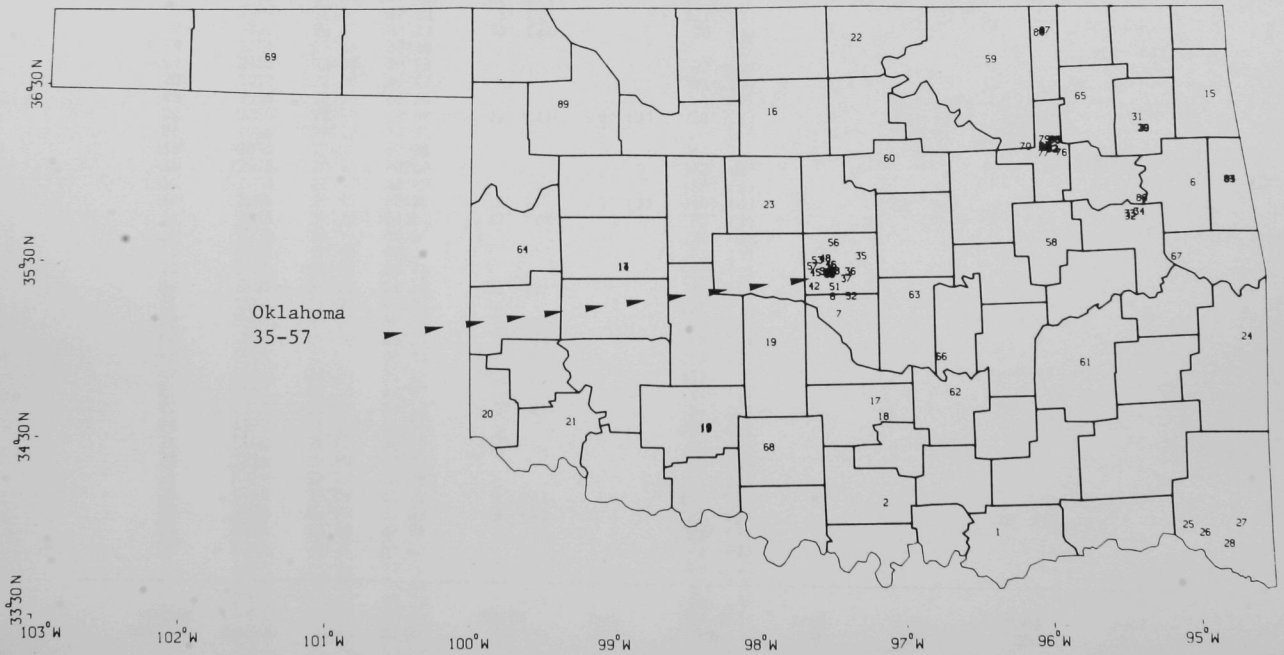


Fig. VI.152. Oklahoma: Locations of SAROAD Monitors (See Table VI.26 for Monitor Numbers)

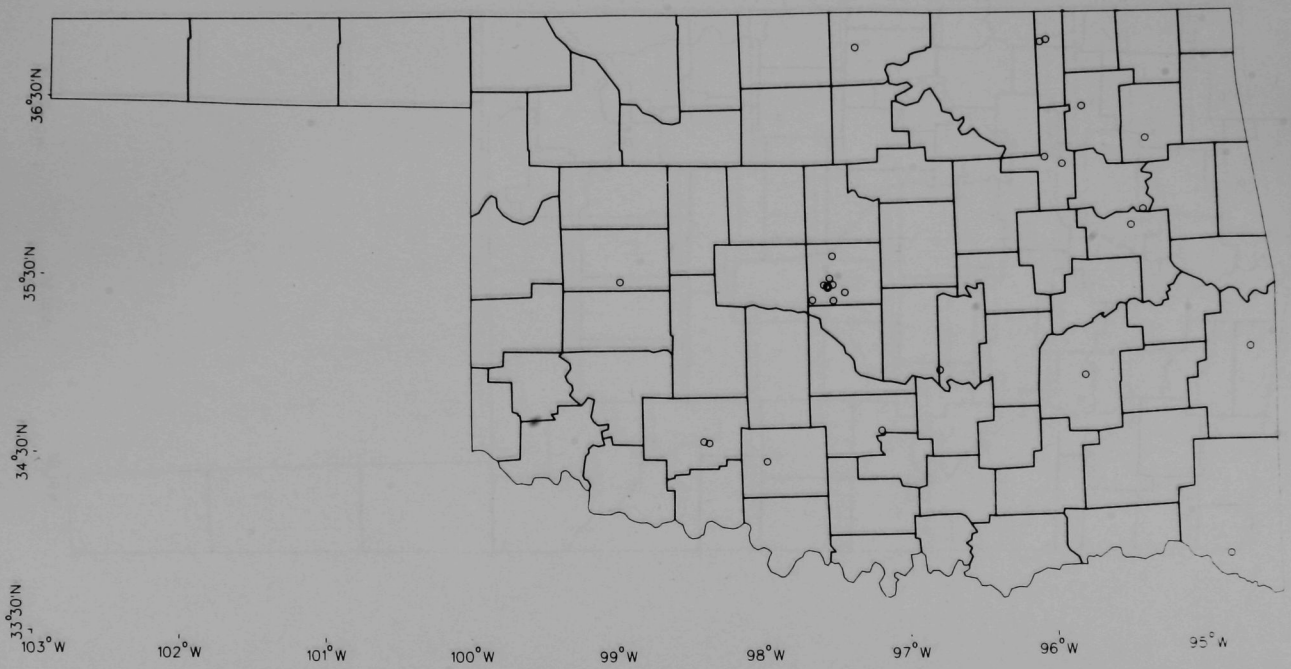


Fig. VI.153. Oklahoma: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

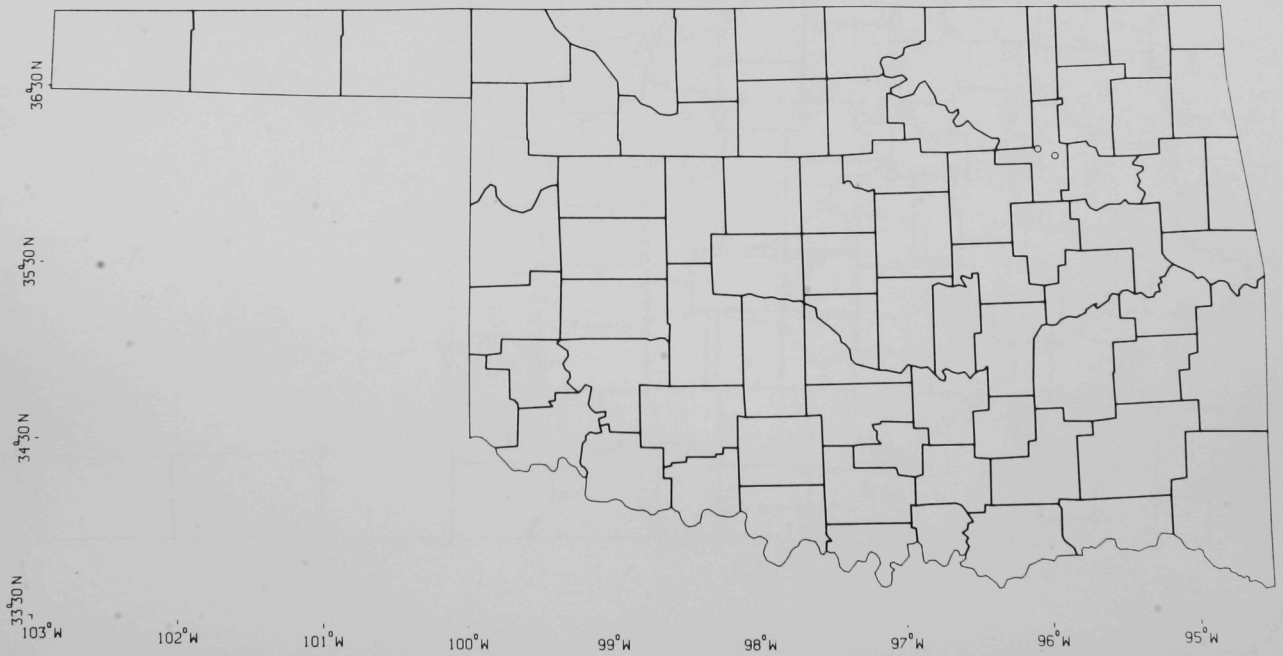


Fig. VI.154. Oklahoma: Monitors Reporting Adequate Data on Annual Average SO_2; No Violations

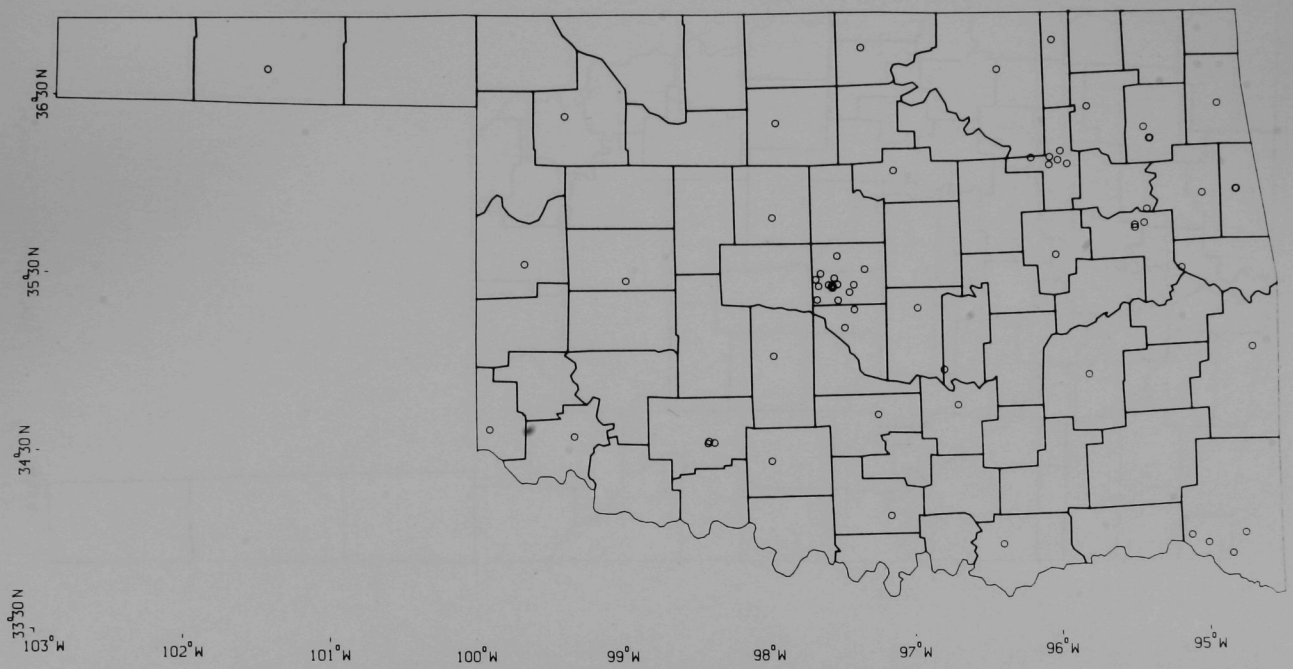


Fig. VI.155. Oklahoma: Monitors Reporting Adequate Data on 24-hr Average TSP; No Violations

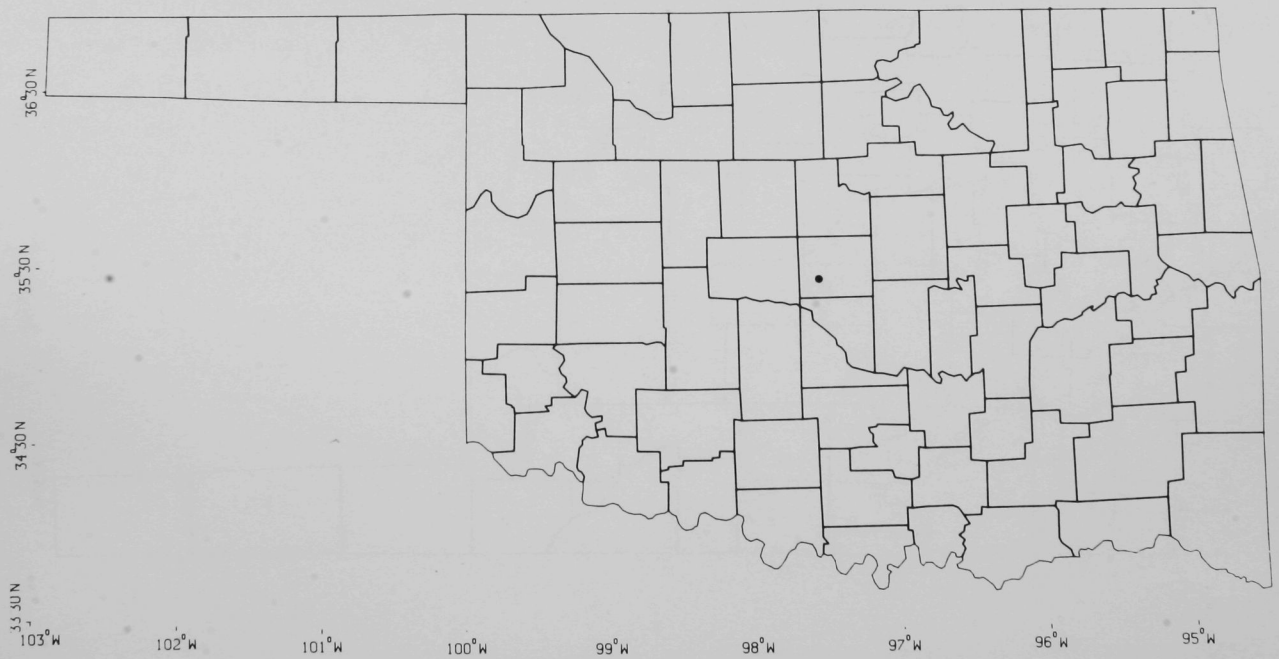


Fig. VI.156. Oklahoma: Monitors Reporting Adequate Data on Annual Average TSP; Violations Shown by Shaded Circles

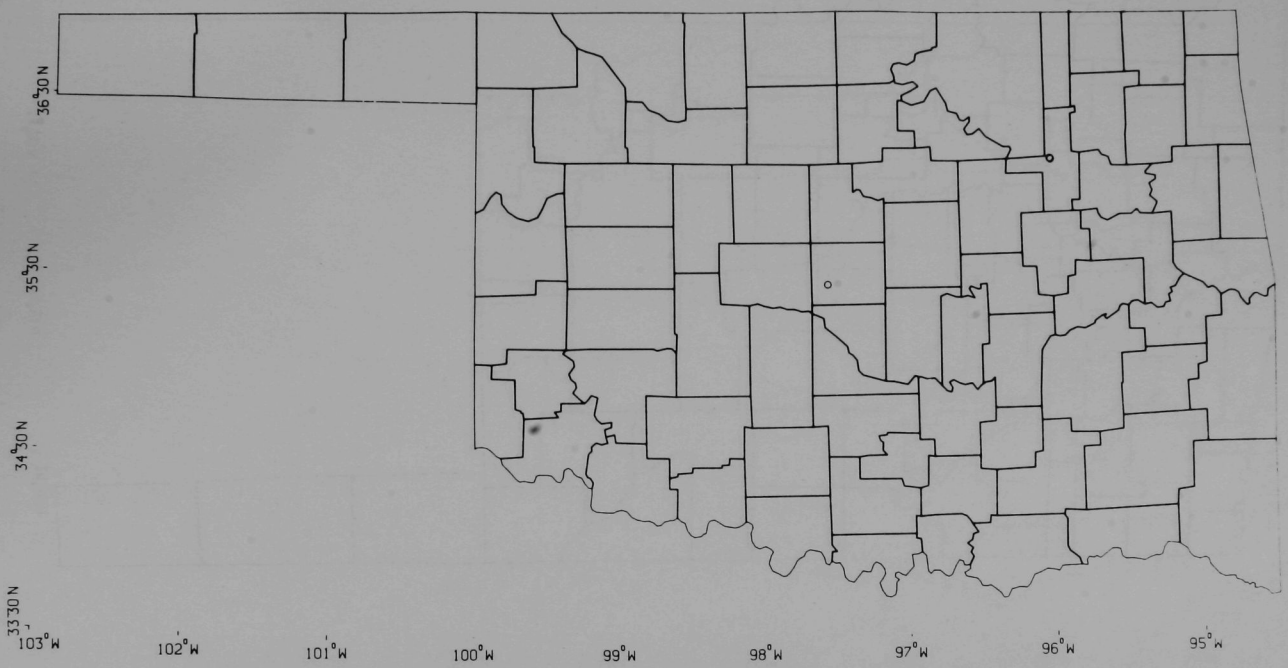


Fig. VI.157. Oklahoma: Monitors Reporting Adequate Data on 8-hr Average CO; No Violations

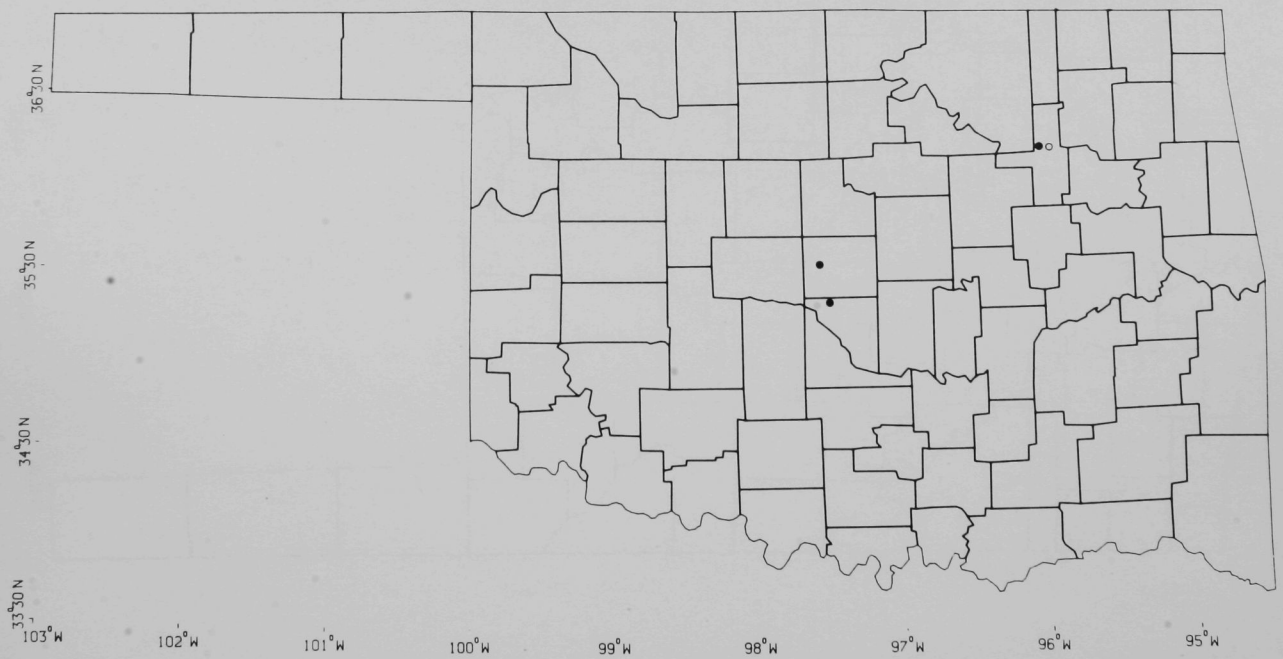


Fig. VI.158. Oklahoma: Monitors Reporting Adequate Data on 1-hr Average O_x; Violations Shown by Shaded Circles

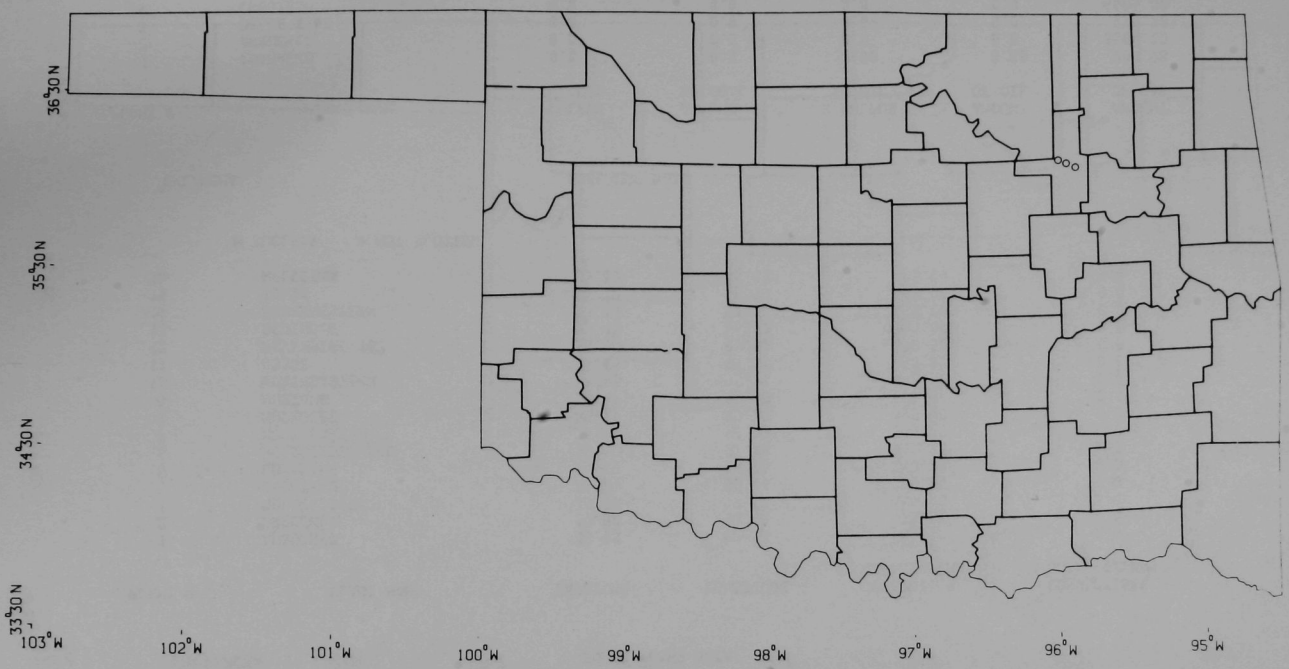


Fig. VI.159. Oklahoma: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table VI.27. Oklahoma: Power Plant and Fuel Use Data

OKLAHOMA POWER PLANT DATA

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	ANADARKO	35.08	98.23	84.50	0.0
2	ARBUCKLE	34.52	96.97	73.50	0.0
3	BELLE ISLE	35.53	97.54	55.00	0.0
4	CHOUTEAU	36.24	95.28	56.25	0.0
5	COMANCHE	34.60	98.36	290.00	0.0
6	HORSESHOE LAKE	35.51	97.18	916.23	0.0
7	MOORELAND	36.44	99.21	384.70	0.0
8	MUSKOGEE	35.77	95.30	195.90	0.0
9	MUSTANG	35.47	97.68	509.30	0.0
10	NORTHEASTERN	36.43	95.70	642.50	0.0
11	OSAGE	36.65	97.06	40.00	0.0
12	RIVERSIDE 1&2	36.00	95.96	472.50	0.0
13	SEMINOLE	35.15	96.63	1701.00	0.0
14	SOUTHWESTERN	35.11	98.34	483.00	0.0
15	TULSA	36.12	95.99	468.00	0.0
16	WELEETKA	35.32	96.13	83.00	0.0

N NUCLEAR * NOT PLOTTED

OKLAHOMA FUEL-USE DATA

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	ANADARKO	0.0	0.0	2.00	8.86	991.98
2	ARBUCKLE	0.0	0.0	0.0	0.0	3604.00
3	BELLE ISLE	0.0	0.0	0.0	0.0	775.70
4	CHOUTEAU	0.0	0.0	0.0	0.0	4606.00
5	COMANCHE	0.0	0.0	0.27	0.05	11053.00
6	HORSESHOE LAKE	0.0	0.0	1.00	1.90	35159.00
7	MOORELAND	0.0	0.0	0.75	0.14	14437.49
8	MUSKOGEE	0.0	0.0	0.0	0.0	9797.00
9	MUSTANG	0.0	0.0	0.0	0.0	30049.00
10	NORTHEASTERN	0.0	0.0	0.65	0.78	39243.00
11	OSAGE	0.0	0.0	0.0	0.0	585.00
12	RIVERSIDE 1&2	0.0	0.0	0.57	0.54	21621.00
13	SEMINOLE	0.0	0.0	1.00	10.39	75425.00
14	SOUTHWESTERN	0.0	0.0	0.31	0.60	24287.00
15	TULSA	0.0	0.0	0.37	4.55	22404.00
16	WELEETKA	0.0	0.0	0.0	0.0	643.00

N NUCLEAR * NOT PLOTTED

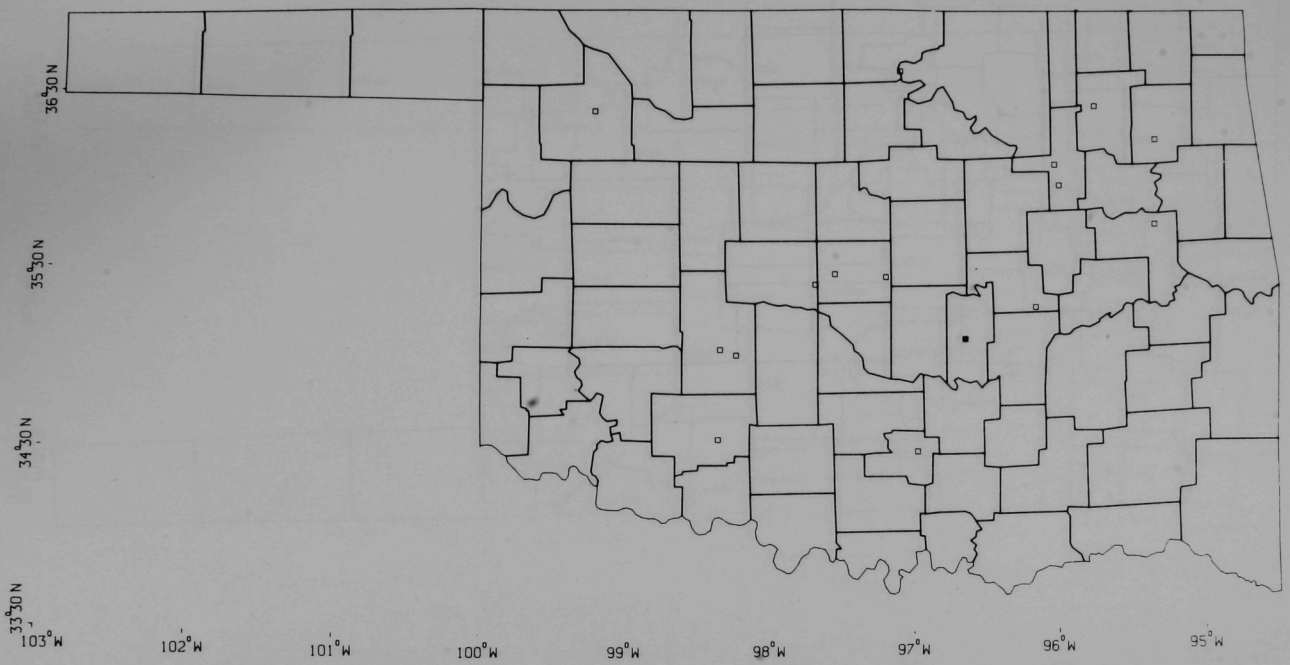


Fig. VI.160. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open, <1000 MW. Triangle = Nuclear)

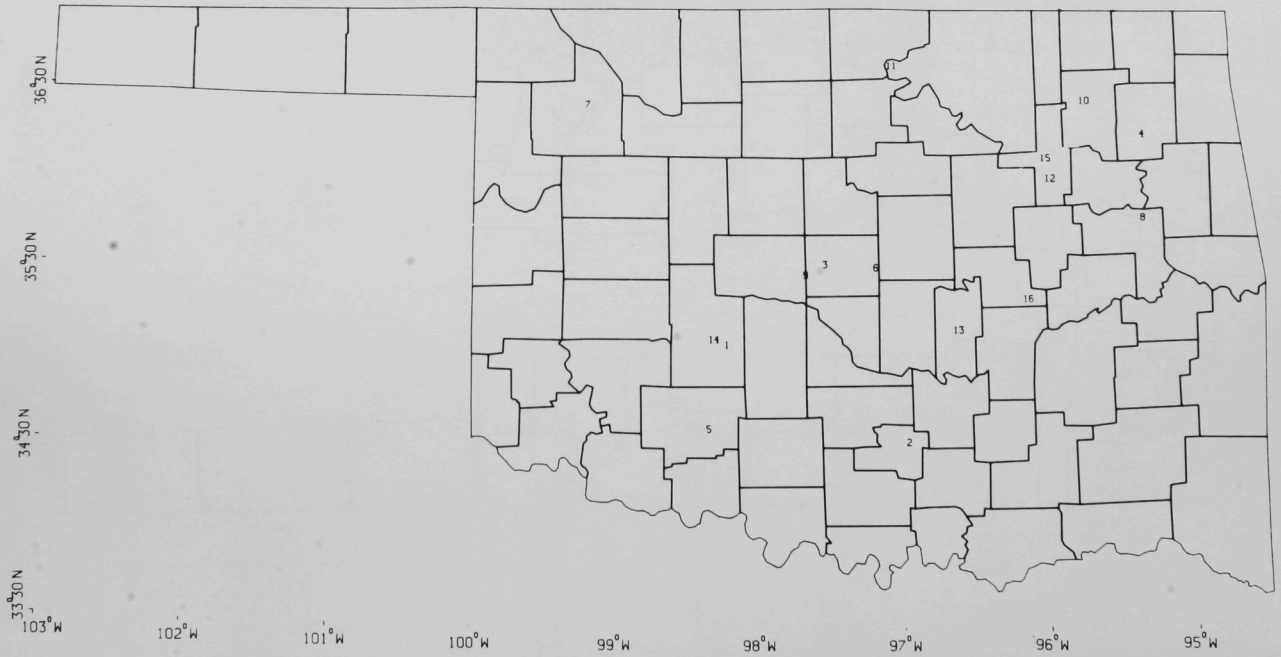


Fig. VI.161. Power Plant Key (See Table VI.27 for Identification and Fuel Use Data)

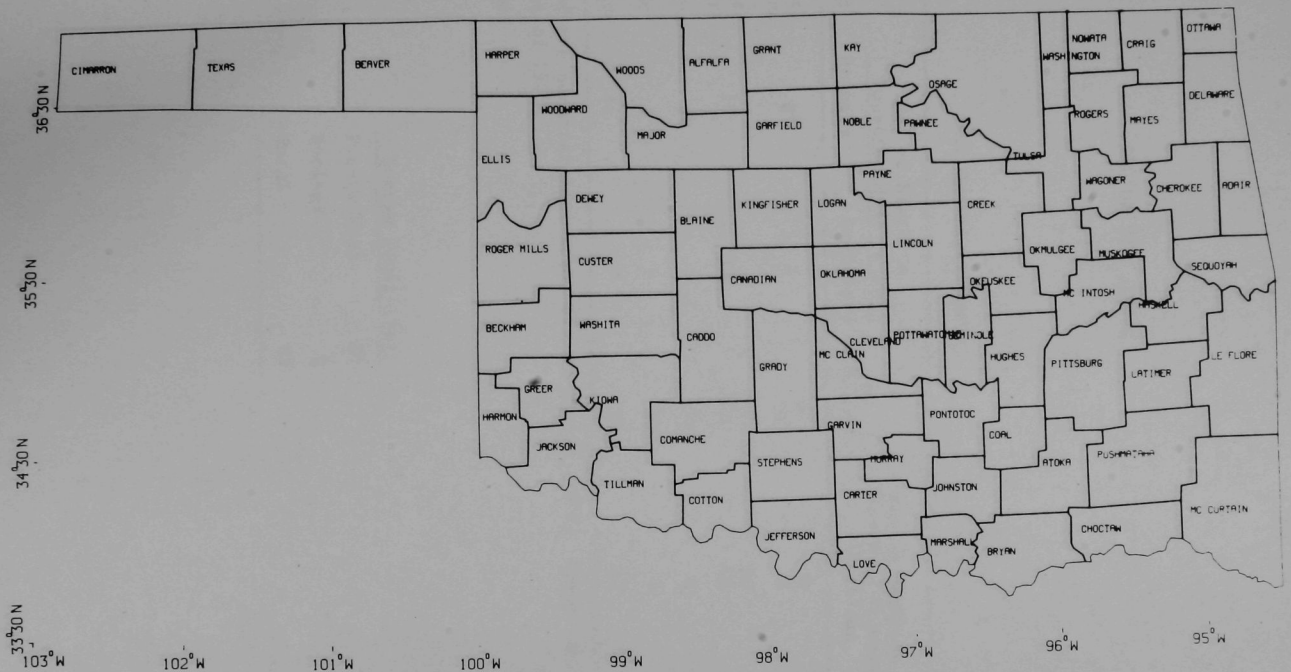


Fig. VI.162. Oklahoma: Key to Counties

REGION VI: TEXAS

Air Quality Summary

Pollutant and Standard Averaging Period		No. of Discrete Nonattainment Areas[a] Primary	Secondary	No. of Monitors	No. of Monitors Recording Primary Violations
SO_2	24 hr	0[b]	0	89	0
	1 yr			50	0
TSP	24 hr	10	11	219	10
	1 yr			144	42
NO_x	1 yr	0[b]	-	53	0
CO	8 hr	1	-	13	1
O_x	1 hr	11	-	14	13

[a]Designations of the nonattainment areas are as of May, 1979. Other information is as of 1975.

[b]No map included.

Energy Facilities	
Fossil Fuel	85
Nuclear	0
Total	85

TEXAS: Official, SIP 4/79

I. SOURCES OF THE PROBLEM

Texas designated 25 areas as in nonattainment for TSP. Of the 25 areas, 14 exceeded the primary standard and 11 exceeded the secondary standard. There are five areas in the city of El Paso (El Paso Co.); three areas in Dallas (Dallas Co.), four in Fort Worth (Tarrant Co.); four on the outskirts of Houston (Harris Co.); one in Texas City (Galveston Co.); one covering the city of Eagle Pass, and one in San Antonio (Bexar Co.); two areas in Corpus Christi (Nueces Co.); and one each in San Benito, Brownsville, McAllen, and Progresso.

The SIP notes that the major cause of nonattainment in all areas is the improper siting of monitors, e.g., located too close to heavily traveled roads and/or too close to the ground. Fugitive dust is the other major cause of nonattainment. In rural areas, the sources are primarily agricultural activities, wind erosion of arid lands, and unpaved roads. The more urbanized areas such as Houston, Dallas, Ft. Worth and El Paso have substantial point sources such as steel production, mineral products, crude oil, and primary metal products facilities. Nevertheless, computer modeling has shown their contribution to be negligible in comparison to the contribution from dirty paved streets and parking lots, unpaved streets and alleys, construction activities, and industrial processes and material handling.

Texas has 13 counties designated as in nonattainment for ozone. In Bexar County and Dallas County, mobile sources account for 70% and petroleum storage and degreasing operations for 20% of the VOC emissions. In El Paso County, 55% of VOC emissions are from mobile sources, 16% from petroleum storage, 14% from refineries, and 12% from miscellaneous solvent use (such as degreasing). In Harris County, mobile sources provide 36%, refineries and petroleum storage each provide 17%, and organic chemical manufacturing provides 15%. Mobile sources produce 58% of the VOC in Tarrant County, whereas industrial surface coating, petroleum storage, and miscellaneous solvent use each produce about 12%. Mobile sources in Victoria County account for 49% of the VOC, whereas 29% comes from organic chemical manufacture, 18% from plastics, and 8% from petroleum storage.

Petroleum refineries produce 47% of the VOC in Galveston County, organic chemical manufacture produces 22% and mobile sources, 14%. Refineries in Jefferson County produce 46%, and petroleum storage produces 25%. Rubber and plastic manufacture accounts for 10%, organic chemicals 9%, and mobile sources 7%. In Gregg County, petroleum storage produces 40% of the VOC, mobile sources contribute another 37%, and industrial surface coating another 11%. In Nueces County, petroleum storage provides 33% and refineries another 29%. Mobile sources provide 23% and organic chemicals 13%.

In Brazoria County, organic chemical manufacture is responsible for 47% of the VOC emissions. Mobile sources and petroleum storage each produce 14% and refineries and plastics each produce about 10%. Organic chemicals manufacture produces 42% of the VOC in Orange County, while 35% comes from rubber and plastics and 12% from mobile sources.

In Ector County, plastics and rubber lead the way with a 30% share of VOC emissions. Refineries follow with 23%, and petroleum storage contributes 12%. Mobile sources produce 17% and organic chemical manufacture produces 15%.

There is one small CO nonattainment area in downtown El Paso, the result of mobile source emissions. No areas in the state exceed the NAAQS for SO_2 or NO_x.

II. ATTAINMENT STRATEGIES

A. TSP

1. Redesignate areas as in attainment

a. Eight areas, due to improperly sited monitors:

- Galveston Co.
- Harris Co.
- Tarrant Co.
- Bexar Co.
- El Paso

b. Three areas, due to rural fugitive dust:

- Hidalgo Co. (two areas)
- Maverick Co.

c. Two areas should be reclassified:

- Brownsville
- Nueces

2. Six areas are covered in the revised SIP:

a. Aldine (Harris Co.)

- clean streets, roads
- pave parking lots

b. Houston (Harris Co.)

- pave parking lots, streets
- control industrial stockpiles

c. Dallas

- secondary violation
- two lead smelters already under compliance order
- control dust on streets

d. Fort Worth

- control dust on streets

e. El Paso (two areas)

- no controls possible in one area, since the cause is wind erosion from arid land
- reduce construction-related emissions in the other area

3. In six areas, EPA requires revision of the SIP:

a. Brownsville (Cameron Co.)

b. Corpus Christi

c. Dallas (2 areas)

d. El Paso (2 areas)

B. O_x

1. RACT for major sources (those producing 100 tons per year)

a. All control technique guidances have been adopted except those for magnet wire coating

b. Harris Co. (Houston): certain minor sources controlled, but attainment by 1982 is impossible

2. FMVECP

3. Request for extension to 1987 for Harris Co.

4. Transportation measures for Harris County under consideration

5. Travis and McLennan Counties can be reclassified, as in attainment because of new ozone standard

6. Houston officials are concerned that reducing HC without more control on NO_x may result in more O_x

C. CO

1. FMVECP

III. NEW SOURCE REVIEW

All new sources were reviewed and an exemption was granted from the permit requirement for sources emitting less than the standard error of a model or below the level of monitor detection. Modifications are not defined as new sources if additions are accompanied by abatement and do not result in new emissions. BACT is required, with consideration of economic impact. A growth allowance is provided in most O_x nonattainment areas, but offsets will be required in Houston and Dallas. Offsets will be required for TSP. A growth allowance is provided in the SIP for CO. State or local communities may assist in finding offsets. Banking is allowed, and the state or local community can establish an offset bank. Previous voluntary reductions (since August 7, 1977) by a source can be banked.

IV. EMISSIONS LIMITATIONS FOR FUEL COMBUSTION

A. SO_2

1. Existing sources

a. Any solid fossil-fueled steam generator: 3.0 lb SO_2 per MM Btu

b. Galveston and Harris Co.:

- not to exceed a ground-level concentration of 0.28 ppm (30-minute average)

c. Jefferson and Orange Cos.:

- not to exceed a ground level concentration of 0.4 ppm

B. TSP

a. Any existing solid-fueled steam generator: 0.3 lb particulate matter per MM Btu

b. Oil or gas fired steam generators

with fuel input > 2,500 MM Btu per hr: 0.1 lb particulate matter per MM Btu

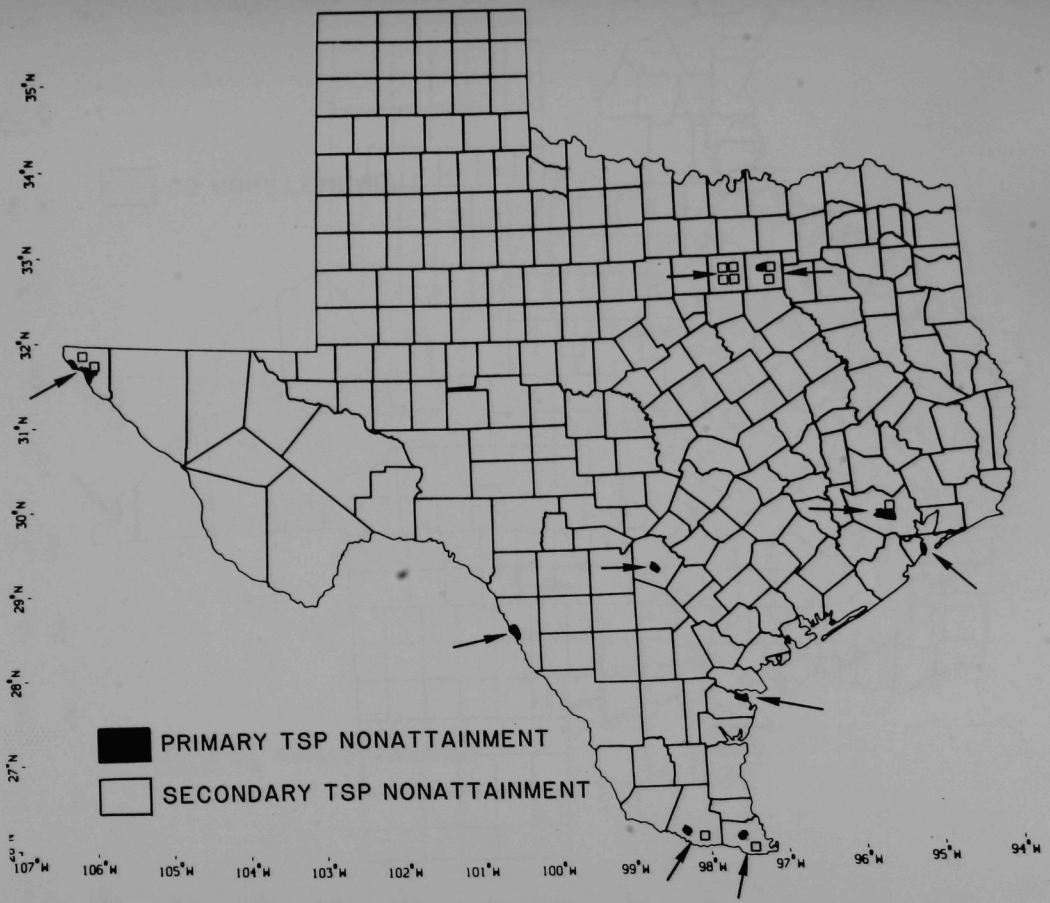


Fig. VI.163. Texas: TSP Nonattainment Areas as Designated May 1979

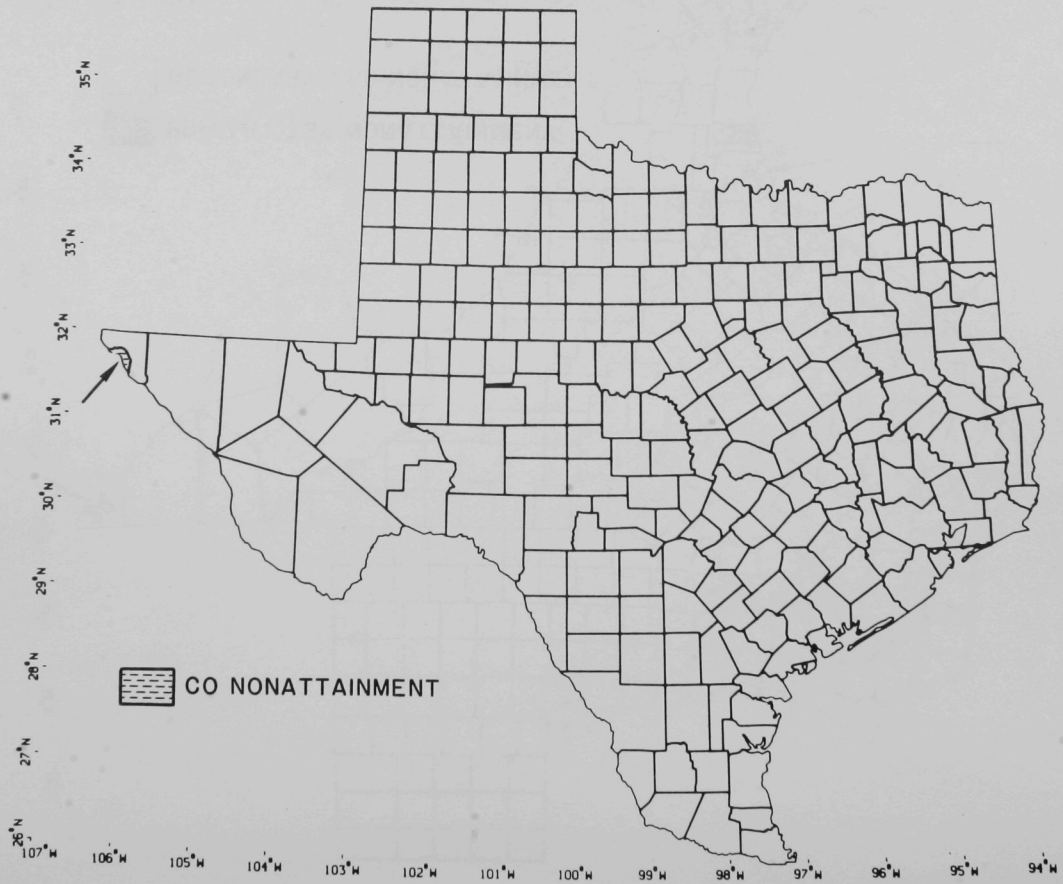


Fig. VI.164. Texas: CO Nonattainment Areas as Designated May 1979

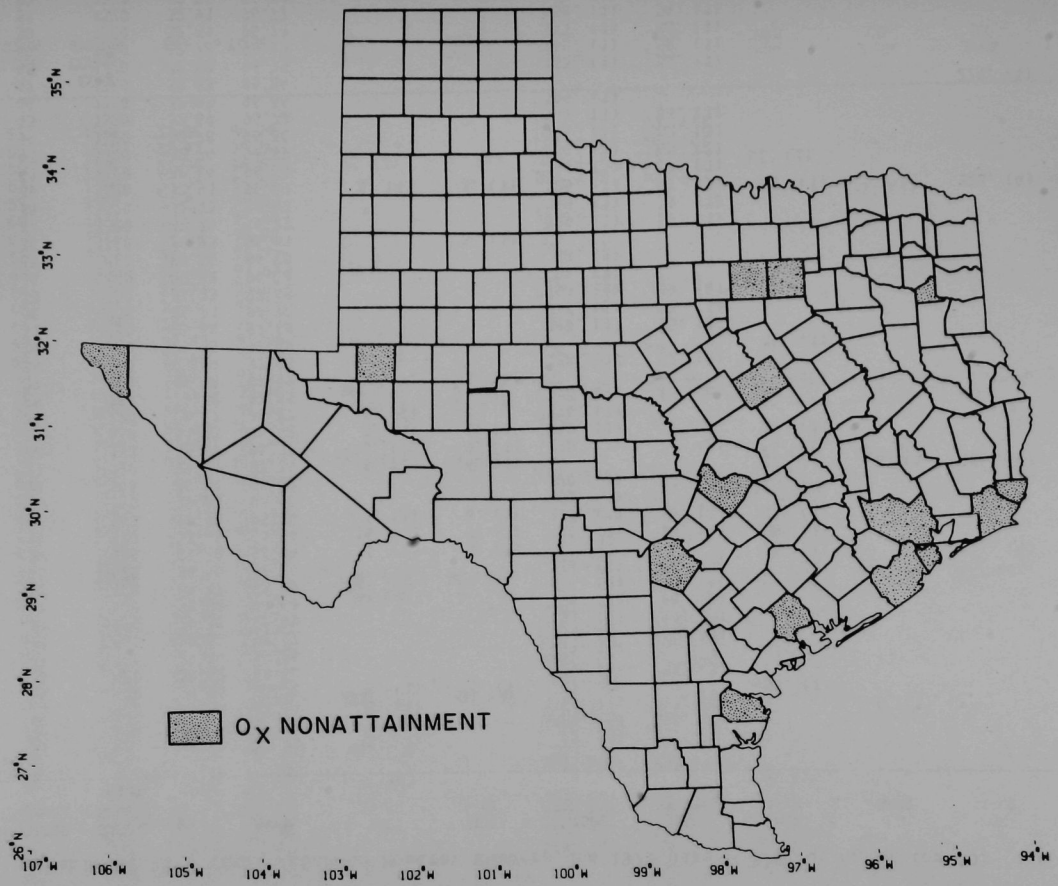


Fig. VI.165. Texas: O_X Nonattainment Areas as Designated May 1979

Table VI.28. Texas: SAROAD Monitor Numbers and 1975 Data ($\mu g/m^3$ or mg/m^3 for CO)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
1	350	28.42	97.75	3. (1)		83. (1)				
2	420	29.51	98.57			128. (1)	38. (1)			
3	420	29.50	98.54	3. (1)		96. (1)	53. (1)		5. (1)	
4	420	29.44	98.82	8. (1)	3. (1)	57. (1)	31. (1)	50. (1)		
5	420	29.42	98.48			119. (1)	53. (1)			
7	420	29.44	98.56			116. (1)				
8	420	29.53	98.47			111. (1)	44. (1)			
10	420	29.36	98.45			98. (1)	41. (1)			
11	420	29.44	98.41			168. (1)	68. (2)			
12	420	29.37	98.55			177. (1)	94. (4)			
13	420	29.44	98.56			128. (1)	56. (1)			
14	420	29.50	98.54	3. (1)	3. (1)			24. (1)		296. (4)
16	520	33.43	94.04	14. (1)	3. (1)	180. (1)	99. (4)	26. (1)		
17	540	29.40	95.24	3. (1)	3. (1)	101. (1)	50. (1)	13. (1)		
18	540	29.03	95.41			153. (1)				
19	540	29.01	95.39			179. (1)	74. (2)			
21	540	29.01	95.39	8. (1)	4. (1)			32. (1)	3. (1)	304. (4)
22	550	30.67	96.37	3. (1)	9. (1)	110. (1)	74. (2)	4. (1)		
23	630	31.73	99.02	3. (1)	3. (1)	142. (1)		37. (1)		
24	720	28.67	96.57	3. (1)		116. (1)				
25	750	26.08	97.85			153. (1)	81. (3)			
27	750	25.88	97.49	3. (1)	3. (1)					
28	750	25.94	97.41			138. (1)	67. (2)			
29	750	25.88	97.49					15. (1)		
31	750	25.88	97.49			169. (1)	83. (3)			
32	750	26.21	97.72			165. (1)	92. (3)			
33	750	26.13	97.63			791. (4)	119. (4)			
34	860	29.82	94.38			49. (1)				
35	860	29.86	94.90			48. (1)				
36	1320	32.93	96.81		3. (1)					
37	1320	32.74	96.77			129. (1)	53. (1)			
38	1320	32.93	96.81			65. (1)	39. (1)			
39	1320	32.93	96.81	3. (1)	3. (1)	125. (1)	47. (1)	48. (1)		323. (4)
41	1320	32.84	96.84			146. (1)	51. (1)			
43	1320	32.74	96.69			160. (1)	65. (2)			
44	1320	32.78	96.86			166. (1)	82. (3)			
45	1320	32.69	96.79			141. (1)	53. (1)			
46	1320	32.83	96.86			104. (1)				
47	1320	32.83	96.84							274. (4)
48	1320	32.82	96.75			133. (1)	56. (1)			
49	1320	32.72	96.89			160. (1)	56. (1)			
50	1320	32.81	96.70			111. (1)	48. (1)			
51	1320	32.91	96.77			130. (1)	54. (1)			
52	1320	32.86	96.81			149. (1)	65. (2)			

Table VI.28. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
53	1320	32.86	96.70			108. (1)	53. (1)			
55	1320	32.77	96.84			139. (1)	66. (2)			
56	1320	32.74	96.87	9. (1)	4. (1)	225. (2)	115. (4)	71. (1)		
57	1320	32.74	96.87			161. (1)	69. (2)			
59	1320	32.93	96.81						3. (1)	
60	1320	32.74	97.02			107. (1)				
61	1320	32.72	96.98			88. (1)				
62	1320	32.74	96.95			54. (1)				
63	1320	32.74	97.01	3. (1)						
64	1320	32.92	96.64			106. (1)	52. (1)			
65	1320	32.74	97.01			111. (1)				
66	1320	32.76	96.97			76. (1)				
67	1320	32.92	96.64	3. (1)						
68	1320	32.86	96.97	3. (1)		83. (1)	45. (1)			
69	1420	33.06	97.01			96. (1)				
70	1610	31.87	102.35	28. (1)	4. (1)	211. (2)	86. (3)	36. (1)		
71	1690	32.39	96.85	3. (1)	3. (1)	174. (1)		15. (1)		
73	1710	31.69	106.21			111. (1)	46. (1)			
76	1710	31.76	106.48			101. (1)				
79	1710	31.76	106.49	184. (1)	23. (1)			42. (1)	9. (2)	
81	1710	32.00	106.60			146. (1)	73. (2)			
83	1710	31.76	106.49					37. (1)		
84	1710	31.75	106.40			321. (3)	123. (4)			
85	1710	31.76	106.49							269. (4)
86	1710	31.59	106.23			119. (1)	51. (1)			
87	1710	31.88	106.58			167. (1)				
88	1710	31.75	106.40	106. (1)	22. (1)			27. (1)	10. (2)	321. (4)
89	1710	31.74	106.36	10. (1)	4. (1)					
90	1710	31.83	106.00			150. (1)				
91	1710	31.74	106.36			306. (3)	131. (4)			
93	1710	31.78	106.52			507. (4)	138. (4)			
94	1710	31.69	106.36			229. (2)	106. (4)			
95	1710	31.79	106.45			184. (1)	82. (3)			
96	1710	31.79	106.45	109. (1)	15. (1)			28. (1)		
97	1710	31.77	106.44			280. (3)	116. (4)			
98	1710	31.76	106.49			134. (1)	83. (3)			
99	1710	31.78	106.51	99. (1)				25. (1)		
100	1710	31.84	106.59			200. (2)	93. (3)			
101	1710	31.84	106.59	3. (1)				16. (1)		
102	1710	31.79	106.47			167. (1)	65. (2)			
103	1710	31.74	106.50			200. (2)	98. (4)			
104	1710	31.80	106.39			132. (1)	54. (1)			
105	1710	31.91	106.54			128. (1)	51. (1)			
106	1710	31.91	106.54					12. (1)		

Table VI.28. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
108	1710	31.91	106.54	23. (1)						
109	1710	31.79	106.51			185. (1)				
110	1710	31.83	106.54			235. (2)	61. (2)			
112	1710	31.76	106.48	6. (1)		187. (1)	99. (4)	28. (1)		
113	1710	31.76	106.48			231. (2)	94. (4)			
114	1710	31.76	106.48	11. (1)	3. (1)			23. (1)		
115	1990	29.55	95.03			108. (1)	64. (2)			
116	1990	29.28	94.82			154. (1)	63. (2)			
117	1990	29.30	94.80			149. (1)				
118	1990	29.53	95.20			139. (1)	66. (2)			
123	1990	29.36	94.95			435. (4)	198. (4)			
125	1990	29.40	94.99			67. (1)				
129	1990	29.40	94.94			117. (1)				
132	1990	29.38	94.93			194. (1)	86. (3)			
133	1990	29.38	94.92			217. (2)	107. (4)			
137	1990	29.40	94.94						2. (1)	
138	1990	29.51	95.10			202. (2)	72. (2)			
139	1990	29.52	95.07	3. (1)						
142	1990	29.40	94.94	58. (1)	8. (1)					
143	1990	29.37	94.95			153. (1)	67. (2)			
144	1990	29.52	95.07			107. (1)				
146	1990	29.40	94.94					28. (1)		
147	1990	29.39	94.90			178. (1)	77. (3)			
148	1990	29.40	94.94							378. (4)
149	2150	35.55	100.96	3. (1)		71. (1)				
150	2160	33.64	96.62	3. (1)		99. (1)				
152	2310	30.37	94.32	3. (1)						
153	2330	29.77	95.03			186. (1)	71. (2)			
154	2330	29.75	94.98	3. (1)		125. (1)	64. (2)			
155	2330	29.72	94.95			92. (1)	46. (1)			
156	2330	29.69	95.12			163. (1)	79. (3)			
158	2330	29.70	95.57	9. (1)	3. (1)	110. (1)	57. (2)	44. (1)		
159	2330	29.94	95.65	3. (1)	3. (1)	148. (1)		23. (1)		
160	2330	30.05	95.43	15. (1)	4. (1)	119. (1)	54. (1)	33. (1)		
161	2330	29.79	95.12	18. (1)		130. (1)	60. (2)			
162	2330	29.75	95.17			157. (1)				
163	2330	29.75	95.10			135. (1)	55. (1)			
164	2330	29.72	95.05			115. (1)	55. (1)			
165	2330	29.83	95.33	21. (1)	3. (1)	149. (1)		46. (1)	4. (1)	588. (4)
166	2330	29.73	95.12			168. (1)	81. (3)			
168	2330	29.77	95.22	152. (1)	8. (1)			63. (1)		437. (4)
169	2330	29.73	95.25			248. (2)				
170	2330	29.76	95.35	45. (1)					14. (4)	5. (1)
171	2330	29.75	95.36			108. (1)				

Table VI.28. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
172	2330	29.84	95.29			116. (1)				
173	2330	29.61	95.28			173. (1)	65. (2)			
174	2330	29.77	95.22			135. (1)	82. (3)		6. (1)	
177	2330	29.64	95.23			118. (1)	51. (1)			
180	2330	29.64	95.36			133. (1)	63. (2)			
182	2330	29.72	95.35			135. (1)	66. (2)			
184	2330	29.66	95.02	3. (1)	3. (1)	118. (1)	60. (2)	21. (1)		
186	2330	29.74	95.44			100. (1)	56. (1)			
187	2330	29.71	95.51			143. (1)	79. (3)			
188	2330	29.70	95.44			121. (1)	54. (1)			
189	2330	29.72	95.33			123. (1)	62. (2)			
191	2330	29.75	95.17			216. (2)	66. (2)			
192	2330	29.75	95.20			223. (2)	96. (4)			
197	2330	29.83	95.28			182. (1)	75. (2)			
199	2330	29.77	95.31			153. (1)				
204	2330	29.82	95.48			127. (1)	57. (2)			
206	2330	29.86	95.38			116. (1)	55. (1)			
214	2330	29.76	95.37			219. (2)	97. (4)			
217	2330	29.76	95.37			205. (2)	104. (4)			
218	2330	29.26	95.36	8. (1)	3. (1)	141. (1)	78. (3)	72. (1)		
221	2330	29.73	95.21			165. (1)	90. (3)			
224	2330	29.78	95.19			578. (4)	112. (4)			
227	2330	29.71	95.21			137. (1)	84. (3)			
228	2330	29.71	95.21	32. (1)		143. (1)				
229	2330	29.72	95.20			127. (1)				
230	2330	29.65	95.12	3. (1)		91. (1)				
231	2330	29.77	95.20			185. (1)	79. (3)			
234	2330	29.72	95.28			183. (1)	84. (3)			
236	2330	29.67	95.24	3. (1)		126. (1)				
237	2330	30.09	95.62	3. (1)		127. (1)				
238	2380	29.88	97.93			74. (1)				
241	2380	29.88	97.93			102. (1)				
242	2380	29.88	97.93	3. (1)						
243	2380	29.88	97.93	3. (1)						
245	2460	26.08	98.06			157. (1)	69. (2)			
246	2460	26.38	97.90			92. (1)	51. (1)			
247	2460	26.09	97.97			201. (2)	81. (3)			
248	2460	26.21	98.24			195. (1)	102. (4)			
249	2460	26.17	97.96	3. (1)		125. (1)	56. (1)			
250	2580	32.25	101.48	3. (1)	3. (1)	171. (1)	82. (3)	31. (1)		
251	2580	32.25	101.47	3. (1)						
252	2740	30.67	104.01			19. (1)				
253	2760	30.06	94.09	9. (1)	4. (1)	72. (1)		34. (1)		

Table VI.28. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
254	2760	30.06	94.09			77. (1)				
255	2760	29.97	93.95	3. (1)						
256	2760	29.87	93.93	3. (1)						
257	2760	29.95	94.02	59. (1)	5. (1)	129. (1)	56. (1)	26. (1)	2. (1)	
258	2760	29.87	93.93			58. (1)				
259	2760	29.90	93.93	3. (1)						
260	2760	29.95	94.02							347. (4)
261	3350	33.59	101.85	7. (1)	3. (1)	174. (1)		30. (1)		
262	3350	33.59	101.85	3. (1)	3. (1)	268. (3)	84. (3)	17. (1)		
264	3440	31.05	97.17	3. (1)		86. (1)				
265	3450	28.46	98.55			187. (1)				
267 *	3530	68.83	95.97	7. (1)	3. (1)	60. (1)	29. (1)	12. (1)		
269	3550	28.68	100.50			311. (3)	123. (4)			
270	3630	32.01	102.07	7. (1)	3. (1)	144. (1)	71. (2)	22. (1)		
271	3720	30.32	95.48	3. (1)		65. (1)				
272	3730	35.86	101.96	3. (1)						
273	3790	31.63	94.65	3. (1)		40. (1)				
275	3900	29.67	97.50			196. (2)	93. (3)			
278	3900	27.67	97.42			147. (1)	84. (3)			
279	3900	27.74	97.39			154. (1)	67. (2)			
280	3900	27.67	97.42	10. (1)	4. (1)	107. (1)		32. (1)		
282	3900	27.79	97.43	24. (1)	4. (1)	149. (1)	79. (3)	29. (1)	4. (1)	241. (4)
283	3900	27.82	97.43			212. (2)	85. (3)			
284	3900	27.82	97.55			90. (1)	35. (1)			
285	3900	27.81	97.40			154. (1)	61. (2)			
286	3900	27.80	97.43			112. (1)	63. (2)			
287	3900	27.80	97.43	30. (1)	4. (1)			33. (1)		
288	3900	27.76	97.43			113. (1)	61. (2)			
289	3900	27.77	97.40			108. (1)	47. (1)			
290	3900	27.73	97.41			98. (1)	52. (1)			
291	3900	27.75	97.50			118. (1)	42. (1)			
292	3900	27.82	97.46			246. (2)	101. (4)			
294	3960	30.10	93.74	3. (1)	3. (1)	135. (1)		22. (1)		
295	3960	30.06	93.76	5. (1)	3. (1)	84. (1)	50. (1)	10. (1)	3. (1)	368. (4)
297	4250	35.18	101.84			107. (1)				
300	4250	35.21	101.71	3. (1)		70. (1)				
301	4250	32.45	99.68	8. (1)		103. (1)				
302	4250	35.18	101.84	3. (1)						
303	4840	32.35	95.30	3. (1)	3. (1)	111. (1)	55. (1)	30. (1)		
304	5070	32.70	97.10			94. (1)				
305	5070	32.74	97.12			121. (1)				
307	5070	32.75	97.05	3. (1)	3. (1)	82. (1)		20. (1)		
310	5070	32.81	97.36			77. (1)				
311	5070	32.75	97.33	7. (1)	3. (1)	92. (1)	59. (2)	55. (1)		

Table VI.28. (Cont'd)

MONITOR NUMBER	SAROAD COUNTY CODE	LAT	LONG	SO2 24-HR	SO2 1-YR	TSP 24-HR	TSP 1-YR	NOX 1-YR	CO 8-HR	OX 1-HR
313	5070	32.73	97.41			73. (1)				
316	5070	32.73	97.41			92. (1)				
317	5070	32.73	97.46			172. (1)	65. (2)			
318	5070	32.66	97.39			122. (1)	42. (1)			
319	5070	32.68	97.32			181. (1)	72. (2)			
320	5070	32.73	97.28			164. (1)	65. (2)			
321	5070	33.73	97.22			202. (2)	62. (2)			
322	5070	32.80	97.33			165. (1)	67. (2)			
323	5070	32.80	97.38			166. (1)	59. (2)			
324	5070	32.76	97.36			132. (1)				
326	5070	32.73	97.46			106. (1)				
327	5070	32.74	97.35			169. (1)	60. (2)			
328	5070	32.68	97.32			155. (1)				
329	5070	32.73	97.22			129. (1)	52. (1)			
330	5070	32.80	97.33			145. (1)	62. (2)			
332	5070	32.84	97.10			83. (1)				
333	5070	32.75	97.33			92. (1)				
336	5070	32.95	97.06	3. (1)		92. (1)				
337	5090	32.45	99.74	3. (1)	3. (1)	157. (1)	58. (2)	19. (1)		
338	5190	33.18	94.98	67. (1)	6. (1)	103. (1)	56. (1)	23. (1)		
339	5200	31.46	100.44	3. (1)	3. (1)	82. (1)		11. (1)		
341	5200	31.46	100.43	7. (1)		76. (1)				
342	5210	30.37	97.74	3. (1)	3. (1)	163. (1)	60. (2)	25. (1)	5. (1)	206. (4)
343	5210	30.31	97.71	8. (1)	3. (1)	73. (1)		31. (1)		
345	5210	30.27	97.73			1232. (4)	115. (4)			
346	5210	30.24	97.77			141. (1)	56. (1)			
347	5210	30.27	97.73	3. (1)						
348	5210	30.32	97.71			125. (1)	52. (1)			
350	5210	30.34	97.76	7. (1)	3. (1)	102. (1)	45. (1)	26. (1)		
351	5210	30.26	97.69			196. (2)	80. (3)			
352	5210	30.35	97.71			118. (1)				
354	5210	30.28	97.82			119. (1)				
355	5210	30.31	97.79			102. (1)	38. (1)			
353	5210	30.32	97.81			134. (1)				
359	5210	30.31	97.79	3. (1)	3. (1)			7. (1)		
360	5310	29.38	100.92			115. (1)				
361	5350	28.82	96.98	3. (1)		66. (1)				
362	5380	30.72	95.54	3. (1)		61. (1)				
364	5550	33.91	98.50			120. (1)	68. (2)			
365	5550	33.91	98.50	6. (1)	3. (1)	91. (1)		25. (1)		
366	5550	33.91	98.50	3. (1)	3. (1)			23. (1)		

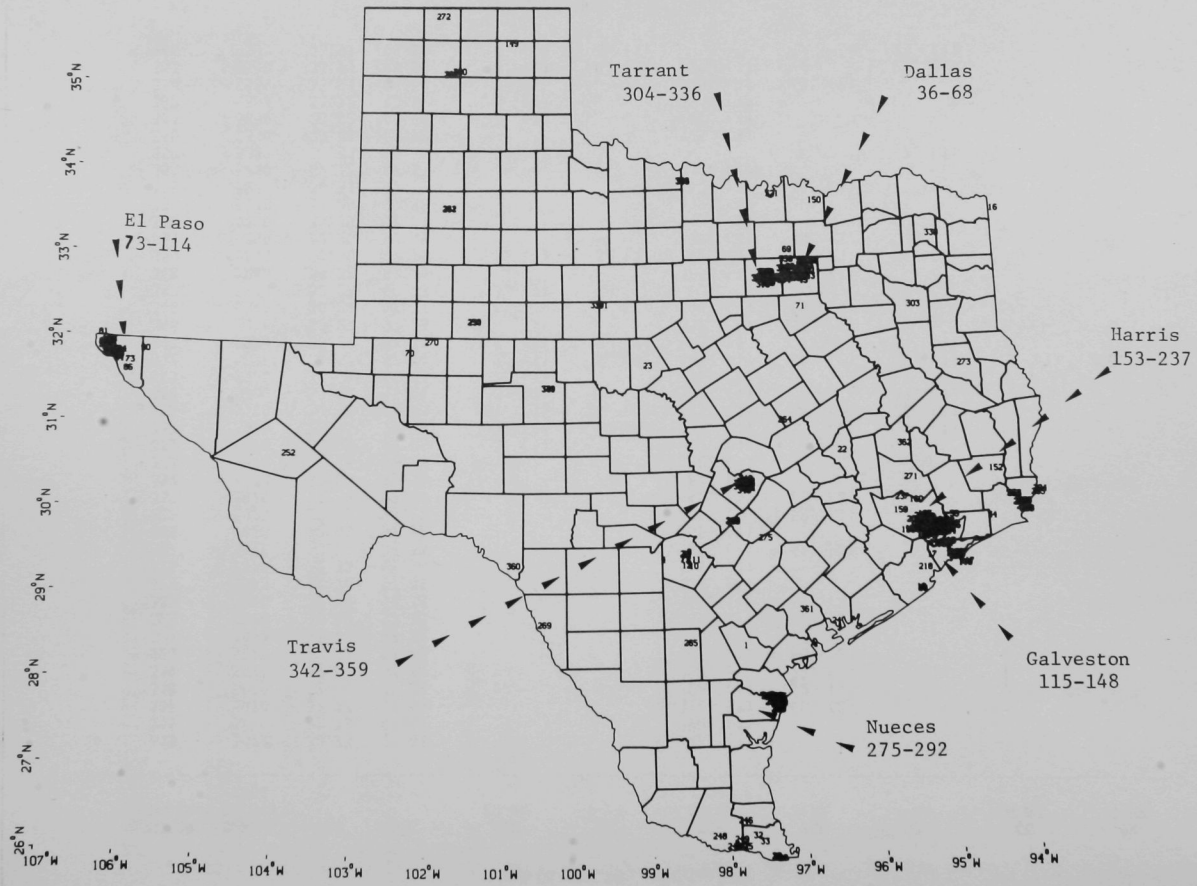


Fig. VI.166. Texas: Locations of SAROAD Monitors (See Table VI.28 for Monitor Numbers)

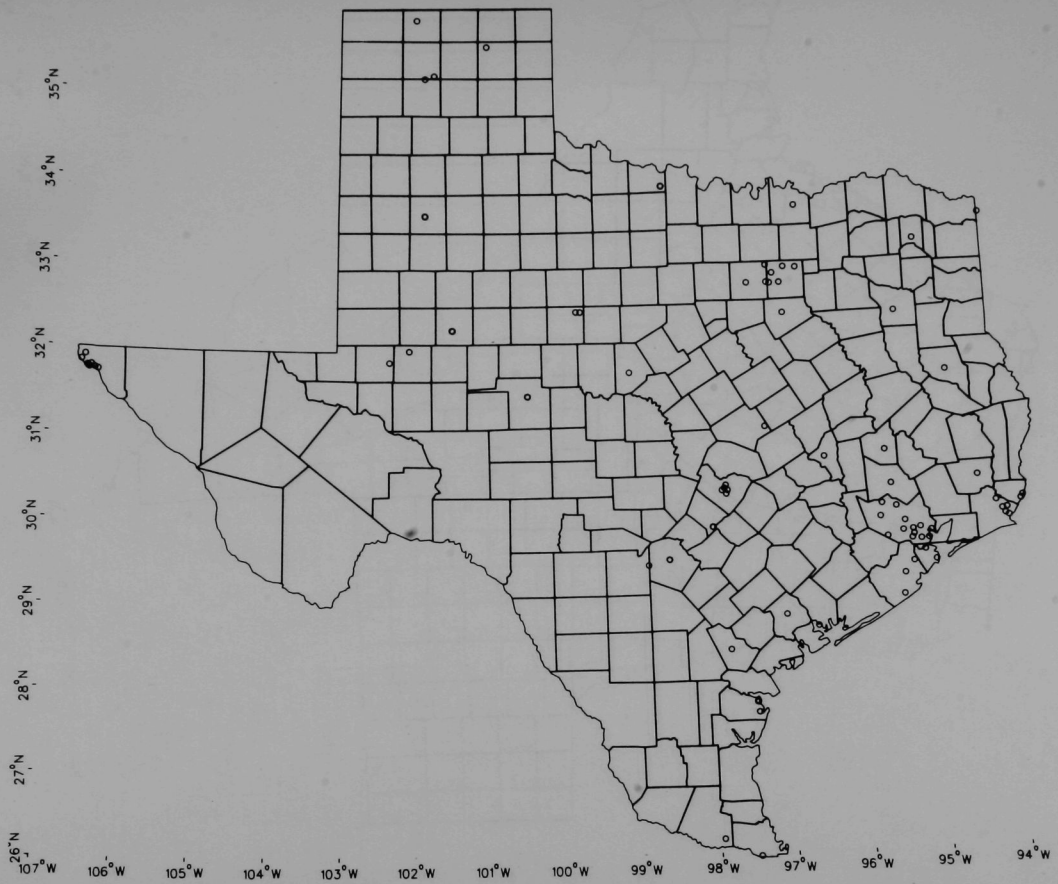


Fig. VI.167. Texas: Monitors Reporting Adequate Data on 24-hr Average SO_2; No Violations

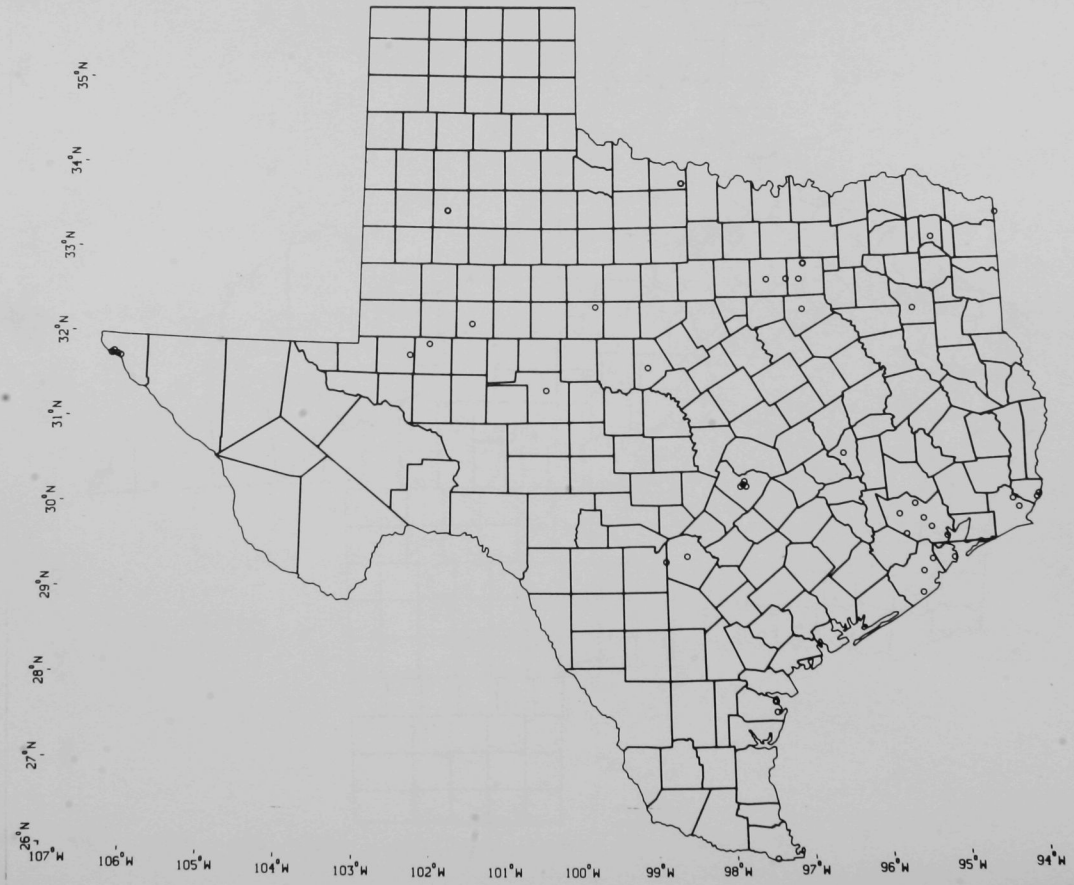


Fig. VI.168. Texas: Monitors Reporting Adequate Data on Annual Average SO_2: No Violations

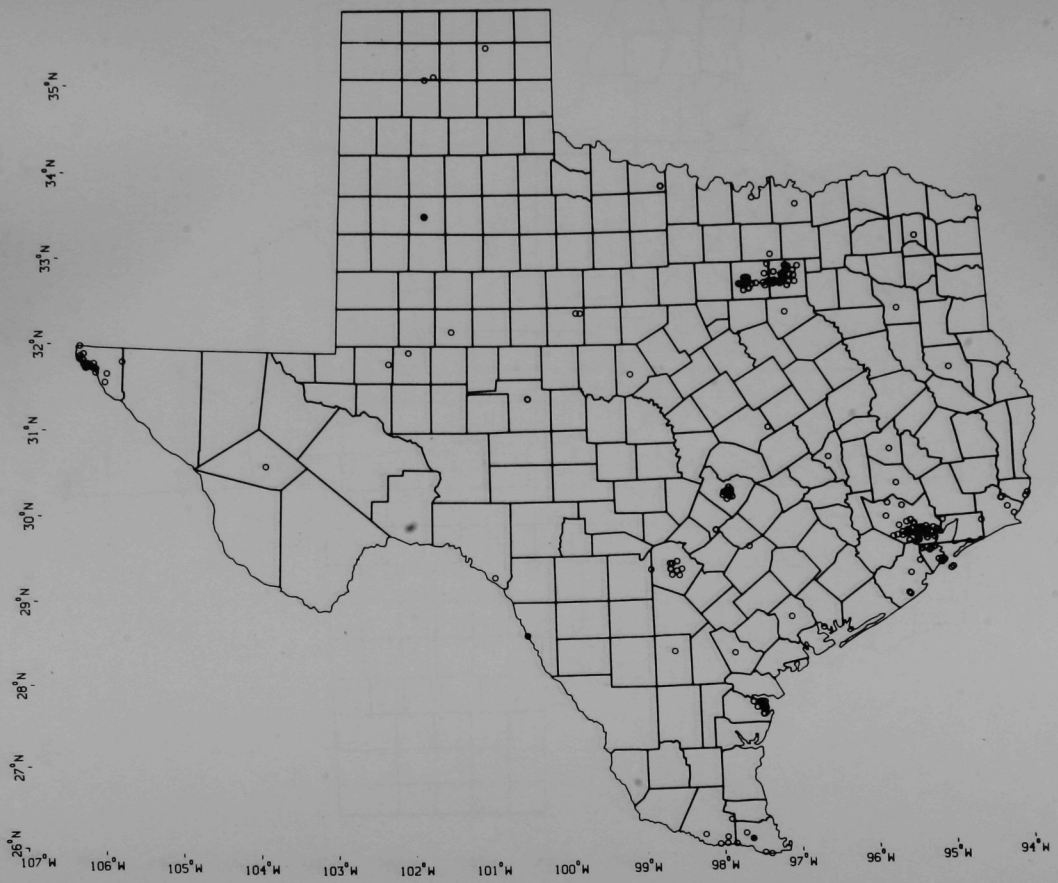


Fig. VI.169. Texas: Monitors Reporting Adequate Data on 24-hr Average TSP; Violations Shown by Shaded Circles

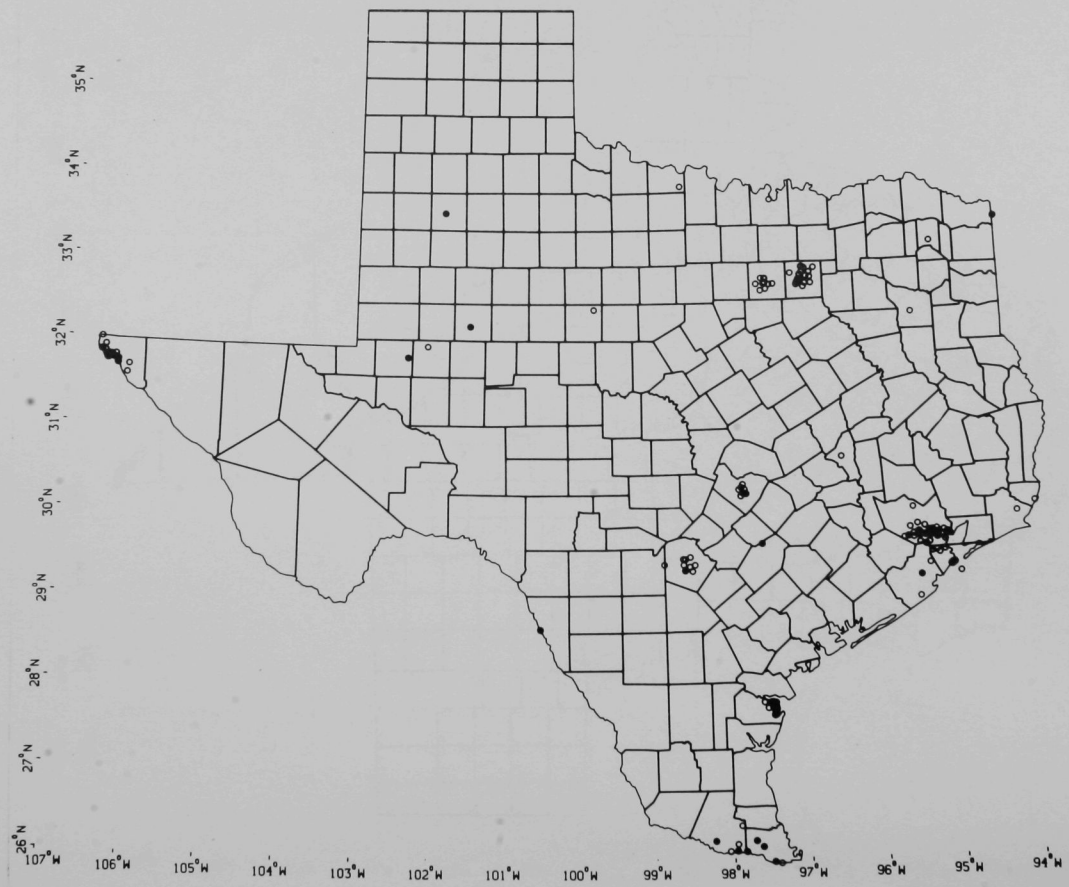


Fig. VI.170. Texas: Monitors Reporting Adequate Data on Annual Average TSP.

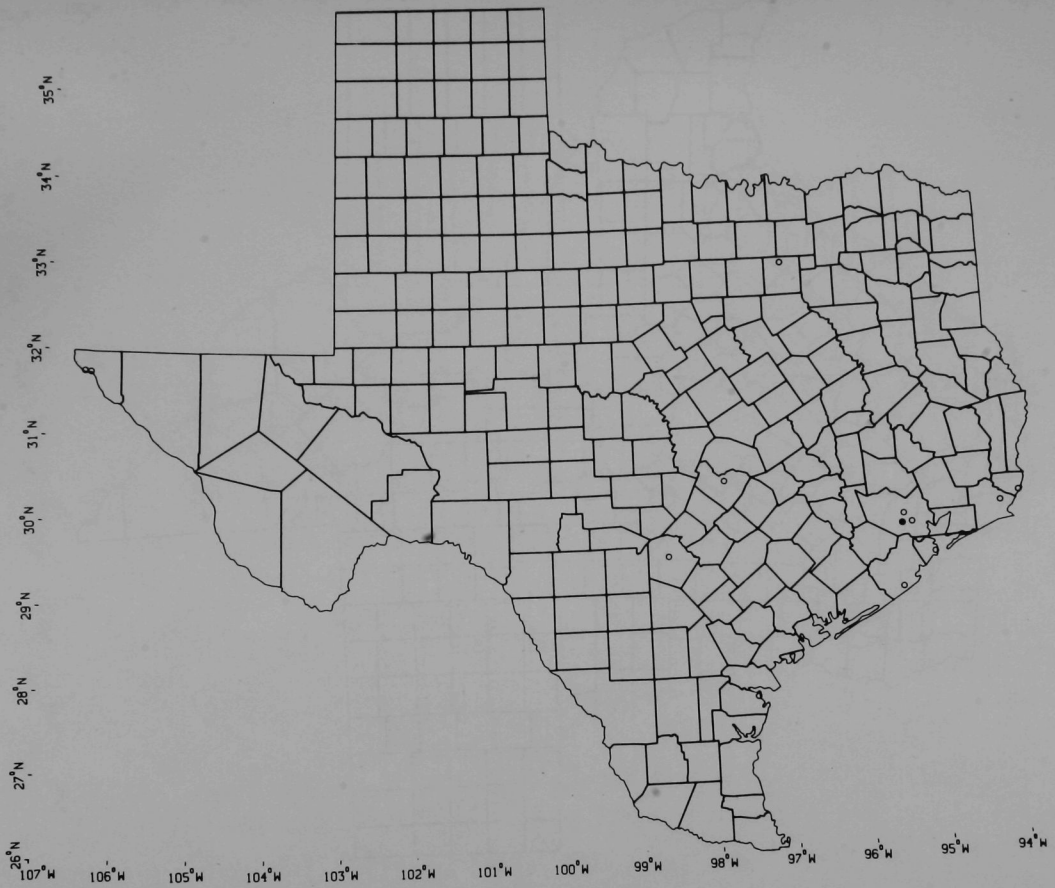


Fig. VI.171. Texas: Monitors Reporting Adequate Data on 8-hr Average CO; Violations Shown by Shaded Circles

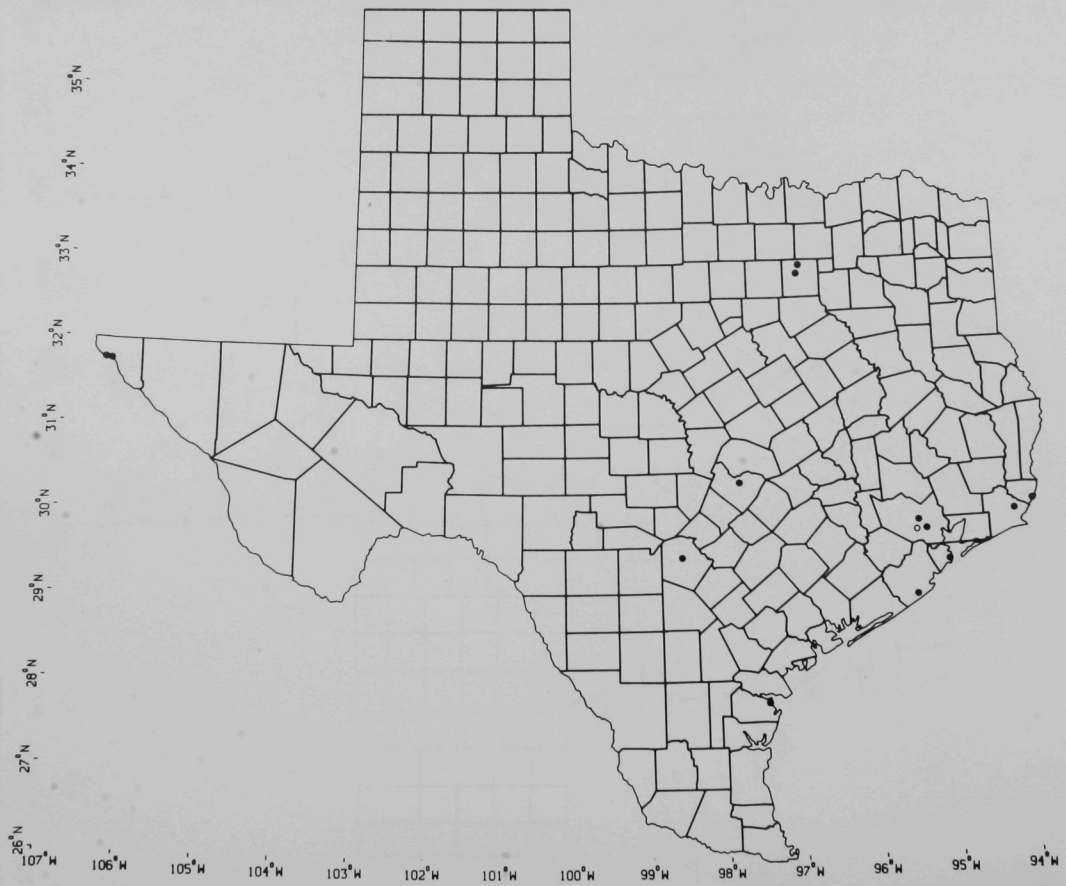


Fig. VI.172. Texas: Monitors Reporting Adequate Data on 1-hr Average O_x;

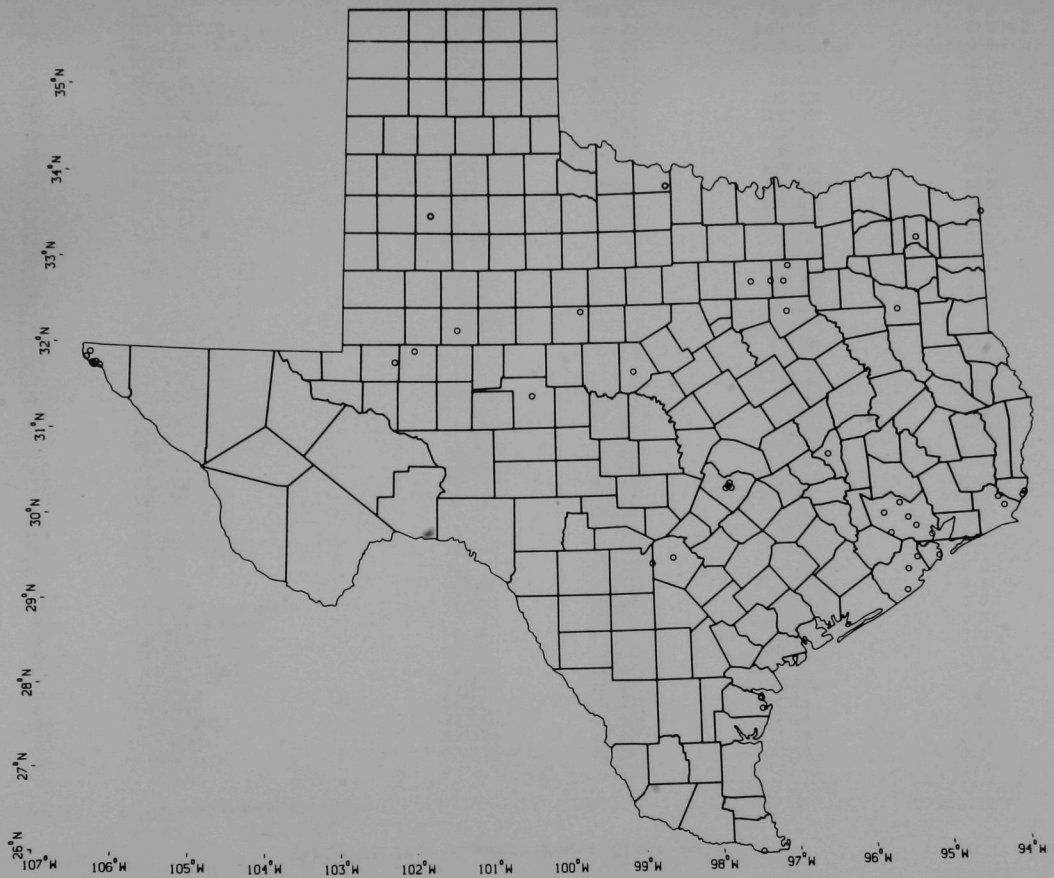


Fig. VI.173. Texas: Monitors Reporting Adequate Data on Annual Average NO_x; No Violations

Table VI.29. Texas: Power Plant Data

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
1	BATES	26.21	98.38	188.70	0.0
2	BERTRON	29.73	95.06	826.30	0.0
3	BIG BROWN	31.82	96.06	1186.80	0.0
4	BRAUNIG	29.26	98.38	894.00	0.0
5	BRYAN	30.66	96.31	128.66	0.0
6	CEDAR BAYOU	29.72	94.95	2295.00	0.0
7	CLARKE	29.65	95.45	210.00	0.0
8	COLLIN	33.20	96.81	156.25	0.0
9	COMANCHE PEAK	32.23	97.77	80.00	0.0
10	CONCHO	31.45	100.43	52.50	0.0
11	DALLAS	32.79	96.81	223.75	0.0
12	DAVIS 1&2	27.61	97.31	352.80	0.0
13	DECKER CREEK	30.31	97.61	321.00	0.0
14	DECORDOVA	32.43	97.83	729.35	0.0
15	DEELY	29.21	98.32	47.50	0.0
16	DEEPWATER	29.72	95.23	334.85	0.0
17	DENTON	33.19	97.11	189.28	0.0
18	DENVER CITY	32.97	102.75	80.00	0.0
19	EAGLE MOUNTAIN	32.91	97.48	706.15	0.0
20	EAST PLANT	35.22	101.81	61.00	0.0
21	FORT PHANTOM 1	32.59	99.68	156.60	0.0
22	GIDEON	30.16	97.26	623.00	0.0
23	GRAHAM	33.13	98.61	634.78	0.0
24	GREENS BAYOU	29.81	95.22	821.40	0.0
25	GREENVILLE	33.13	96.08	51.50	0.0
26	HANDLEY	32.73	97.22	523.35	0.0
27	HILL	27.85	97.62	574.20	0.0
28	HOLLY AVENUE	33.52	101.77	50.00	0.0
29	HOLLY STREET	30.25	97.72	626.00	0.0
30	JONES	33.52	101.71	495.00	0.0
31	JOSLIN	23.66	96.56	261.00	0.0
32	KNOX LEE	32.51	94.82	537.00	0.0
33	LA PALMA	26.13	97.62	219.00	0.0
34	LAKE CREEK	31.47	96.99	315.63	0.0
35	LAKE HUBBARD	32.84	96.55	927.52	0.0
36	LAKE PAULINE	34.25	99.68	44.50	0.0
37	LAREDO	27.57	99.51	177.00	0.0
38	LEON CREEK	29.35	98.58	264.00	0.0
39	LEWIS CREEK	30.44	95.52	542.88	0.0
40	LONE STAR	32.92	94.71	50.00	0.0
41	MILLAR	32.66	98.31	404.00	0.0
42	MISSION ROAD	29.40	98.49	164.00	0.0
43	MONTICELLO	33.08	95.03	1186.80	0.0
44	MOORE	35.97	101.87	68.20	0.0

N NUCLEAR * NOT PLOTTED

Table VI.29. (Cont'd)

PLANT #	PLANT NAME	LATITUDE	LONGITUDE	OPERATING CAPACITY(MW)	CONVERTIBLE CAPACITY(MW)
45	MORGAN CREEK	32.32	100.92	845.76	0.0
46	MOUNTAIN CREEK	32.72	96.94	989.74	0.0
47	NECHES	30.07	94.05	452.27	0.0
48	NEWMAN	32.91	96.62	96.50	0.0
49	NEWMAN	31.98	106.43	265.80	0.0
50	NICHOLS	35.28	101.75	474.70	0.0
51	NORTH LAKE	32.95	96.97	708.61	0.0
52	NORTH MAIN	32.76	97.34	116.25	0.0
53	NORTH TEXAS	32.78	97.70	75.00	0.0
54	NUECES BAY	27.82	97.42	595.50	0.0
55	OAK CREEK	32.85	100.29	81.60	0.0
56	OLINGER	33.07	96.45	108.60	0.0
57	ON SOMMERS 1-3	29.31	98.32	892.00	0.0
58	PAINT CREEK	33.08	99.58	241.60	0.0
59	PARISH	29.43	95.63	1255.40	0.0
60	PARKDALE	32.78	96.72	340.63	0.0
61	PEARSALL	28.86	99.11	75.00	0.0
62	PERMIAN BASIN	31.58	102.96	700.45	0.0
63	PLANT #2	33.56	101.84	80.50	0.0
64	PLANT X	34.17	102.41	434.40	0.0
65	RIO PECOS	30.70	101.41	136.50	0.0
66	RIVER CREST	33.40	95.16	112.50	0.0
67	RIVERVIEW	35.71	101.41	34.50	0.0
68	ROBINSON	29.49	94.98	2314.50	0.0
69	SABINE	30.02	93.88	1543.60	0.0
70	* SAM RAYBURN	0.0	0.0	25.00	0.0
71	* SAM RAYBURN	0.0	0.0	25.00	0.0
72	SAN ANGELO	31.39	100.49	100.85	0.0
73	SEAHOLM	30.27	97.76	125.00	0.0
74	SI RAY	26.15	97.55	53.00	0.0
75	SOUTH TEXAS PROJ	28.83	96.00	56.00	0.0
76	STRYKER CREEK	31.94	94.99	703.48	0.0
77	T C FERGUSON	30.70	98.69	446.40	0.0
78	TRADINGHOUSE	31.57	96.97	1379.70	0.0
79	TRINIDAD	32.13	96.10	412.10	0.0
80	TUTTLE	29.53	98.42	495.00	0.0
81	VALLEY	33.65	96.37	1175.50	0.0
82	VICTORIA	28.79	97.00	553.50	0.0
83	WEBSTER	29.53	95.10	614.00	0.0
84	WHARTON	29.94	95.53	322.80	0.0
85	WILKES	32.85	94.55	881.50	0.0

N NUCLEAR * NOT PLOTTED

Table VI.30. Texas: Fuel Use Data

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
1	BATES	0.0	0.0	0.0	0.0	6128.00
2	BERTRON	0.0	0.0	1.10	7.61	32207.35
3	BIG BROWN	0.60	5471.40	0.0	0.0	503.60
4	BRAUNIG	0.0	0.0	0.39	35.05	21388.98
5	BRYAN	0.0	0.0	0.18	5.30	5650.30
6	CEDAR BAYOU	0.0	0.0	0.80	55.31	*******
7	CLARKE	0.0	0.0	0.0	0.0	778.84
8	COLLIN	0.0	0.0	0.40	5.25	2295.99
9	COMANCHE PEAK	0.0	0.0	0.0	0.0	0.0
10	CONCHO	0.0	0.0	0.40	0.03	193.04
11	DALLAS	0.0	0.0	0.51	0.68	1253.49
12	DAVIS 1&2	0.0	0.0	0.60	0.26	9753.40
13	DECKER CREEK	0.0	0.0	0.20	5.00	10068.00
14	DECORDOVA	0.0	0.0	0.10	12.35	16438.66
15	DEELY	0.0	0.0	0.0	0.0	0.0
16	DEEPWATER	0.0	0.0	0.0	0.0	14481.35
17	DENTON	0.0	0.0	1.00	121.10	5277.36
18	DENVER CITY	0.0	0.0	0.0	0.0	5604.00
19	EAGLE MOUNTAIN	0.0	0.0	0.60	1.00	15341.00
20	EAST PLANT	0.0	0.0	0.0	0.0	1303.00
21	FORT PHANTOM 1	0.0	0.0	0.40	131.34	7355.03
22	GIDEON	0.0	0.0	0.10	17.80	19923.00
23	GRAHAM	0.0	0.0	0.0	0.0	23628.00
24	GREENS BAYOU	0.0	0.0	0.50	1.14	17535.22
25	GREENVILLE	0.0	0.0	0.10	3.10	2343.00
26	HANDLEY	0.0	0.0	0.0	0.0	18422.00
27	HILL	0.0	0.0	0.0	0.0	14510.20
28	HOLLY AVENUE	0.0	0.0	0.30	9.70	3298.00
29	HOLLY STREET	0.0	0.0	1.00	2.80	15386.90
30	JONES	0.0	0.0	0.73	18.30	17883.00
31	JOSLIN	0.0	0.0	0.60	3.90	9941.00
32	KNOX LEE	0.0	0.0	0.70	647.00	20986.00
33	LA PALMA	0.0	0.0	0.20	0.80	7510.20
34	LAKE CREEK	0.0	0.0	0.20	11.66	15063.43
35	LAKE HUBBARD	0.0	0.0	0.16	56.87	28674.53
36	LAKE PAULINE	0.0	0.0	0.40	0.79	1181.90
37	LAREDO	0.0	0.0	0.12	8.47	4707.10
38	LEON CREEK	0.0	0.0	0.76	34.70	1271.03
39	LEWIS CREEK	0.0	0.0	0.10	31.50	29220.00
40	LONE STAR	0.0	0.0	0.06	2.89	200.80
41	MILLAR	0.0	0.0	0.10	1.12	12336.43
42	MISSION ROAD	0.0	0.0	0.62	0.47	3446.72
43	MONTICELLO	0.48	3572.90	0.20	75.00	0.0
44	MOORE	0.0	0.0	0.0	0.0	5297.00

N NUCLEAR * NOT PLOTTED

Table VI.30. (Cont'd)

PLANT #	PLANT NAME	% SULFUR IN COAL	AMOUNT OF COAL	% SULFUR IN OIL	AMOUNT OF OIL	AMOUNT OF GAS
45	MORGAN CREEK	0.0	0.0	0.80	3.00	36252.00
46	MOUNTAIN CREEK	0.0	0.0	0.55	9.01	21316.01
47	NECHES	0.0	0.0	0.30	11.20	24971.00
48	NEWMAN	0.0	0.0	0.40	10.84	3472.80
49	NEWMAN	0.0	0.0	1.40	4.60	17939.00
50	NICHOLS	0.0	0.0	0.0	0.0	23921.00
51	NORTH LAKE	0.0	0.0	0.74	9.49	21729.08
52	NORTH MAIN	0.0	0.0	0.80	3.00	949.00
53	NORTH TEXAS	0.0	0.0	0.10	0.17	1690.30
54	NUECES BAY	0.0	0.0	0.50	12.00	19061.00
55	OAK CREEK	0.0	0.0	0.40	71.80	5089.66
56	OLINGER	0.0	0.0	0.40	3.43	8302.40
57	OW SOMMERS 1-3	0.0	0.0	0.28	19.46	25993.58
58	PAINT CREEK	0.0	0.0	0.30	41.48	9118.04
59	PARISH	0.0	0.0	2.30	0.25	57595.91
60	PARKDALE	0.0	0.0	0.93	1.45	2879.21
61	PEARSALL	0.0	0.0	0.59	0.71	5230.72
62	PERMIAN BASIN	0.0	0.0	1.20	4.00	30479.00
63	PLANT #2	0.0	0.0	0.30	8.40	3469.00
64	PLANT X	0.0	0.0	0.47	14.39	14111.00
65	RIO PECOS	0.0	0.0	0.0	0.0	9537.00
66	RIVER CREST	0.0	0.0	0.70	21.84	1930.73
67	RIVERVIEW	0.0	0.0	0.0	0.0	1614.00
68	ROBINSON	0.0	0.0	0.0	0.0	********
69	SABINE	0.0	0.0	0.20	3.40	79147.00
70	* SAM RAYBURN	0.0	0.0	0.0	0.0	2226.04
71	* SAM RAYBURN	0.0	0.0	0.0	0.0	2226.04
72	SAN ANGELO	0.0	0.0	0.20	4.30	8559.22
73	SEAHOLM	0.0	0.0	1.00	5.10	3776.40
74	SI RAY	0.0	0.0	0.0	0.0	5556.00
75	SOUTH TEXAS PROJ	0.0	0.0	0.0	0.0	0.0
76	STRYKER CREEK	0.0	0.0	0.0	0.0	31272.75
77	T C FERGUSON	0.0	0.0	0.0	0.0	7405.00
78	TRADINGHOUSE	0.0	0.0	0.10	45.42	44594.74
79	TRINIDAD	0.0	0.0	0.50	25.47	7375.41
80	TUTTLE	0.0	0.0	0.56	193.20	5512.35
81	VALLEY	0.0	0.0	0.10	13.89	29188.24
82	VICTORIA	0.0	0.0	0.0	0.0	16521.00
83	WEBSTER	0.0	0.0	2.50	0.01	21768.08
84	WHARTON	0.0	0.0	0.0	0.0	14656.04
85	WILKES	0.0	0.0	0.10	2.54	52466.00

N NUCLEAR * NOT PLOTTED

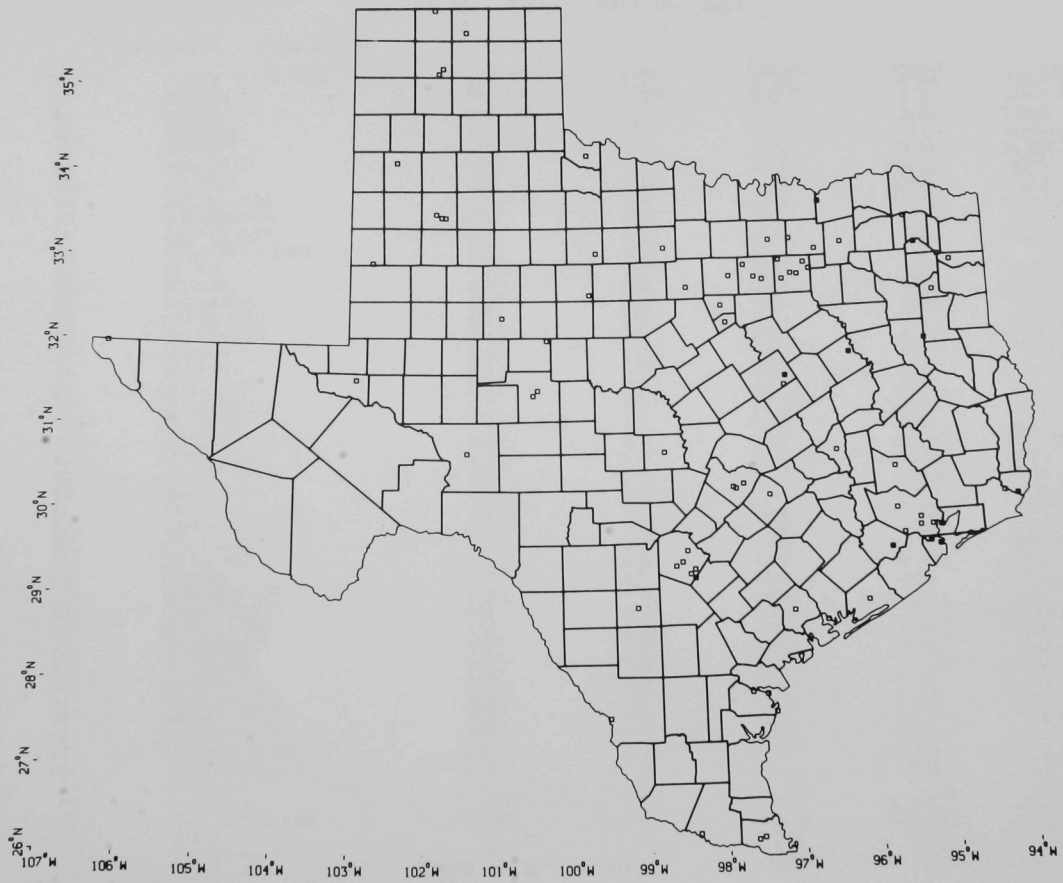


Fig. VI.174. Power Plant Locations (Square = Fossil Fuel: Shaded, ≥1000 MW; Open,

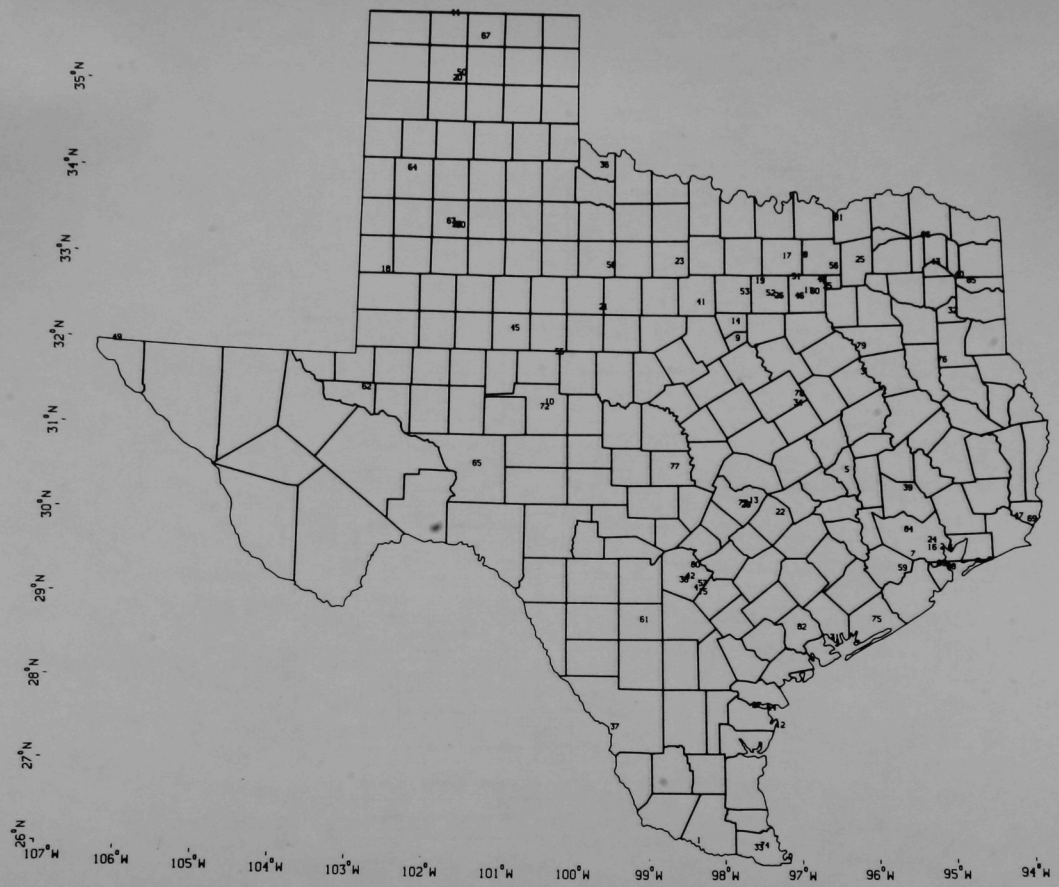


Fig. VI.175. Power Plant Key (See Tables VI.29 and VI.30 for Identification and Fuel Use Data)

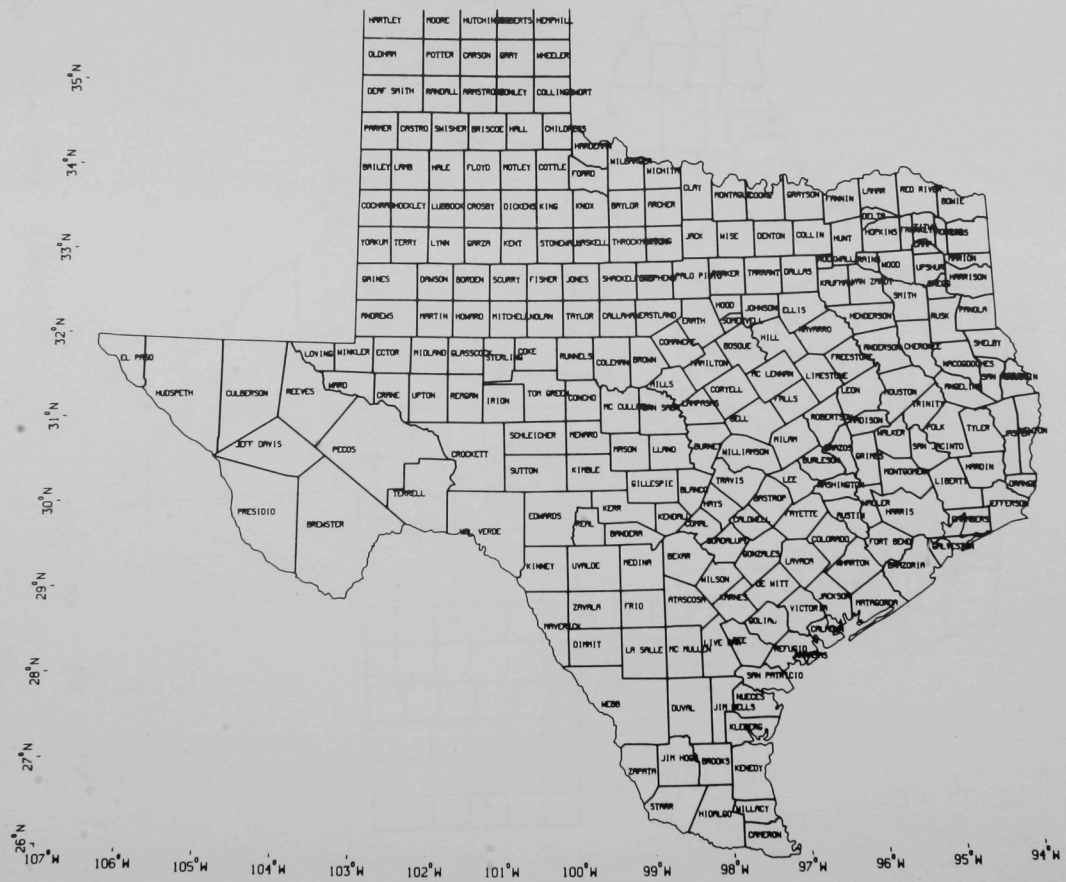


Fig. VI.176. Texas: Key to Counties

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