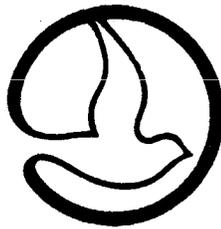
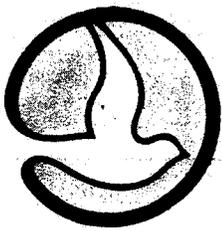


**THE SOUTH COAST  
AIR QUALITY MANAGEMENT DISTRICT**



**A PROGRESS REPORT**

**1977 - 1983**

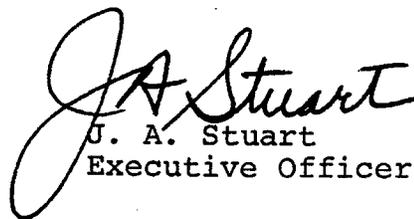


South Coast  
AIR QUALITY MANAGEMENT DISTRICT  
9150 FLAIR DRIVE, EL MONTE, CA 91731 (213) 572-6200

F O R E W O R D

The South Coast Air Quality Management District has been operating as a special regional agency since 1977, when it was created through the consolidation of four individual air pollution control districts for the counties of Los Angeles, Orange, Riverside, and San Bernardino.

This summary report reviews the progress made in improving air quality in the last six years and describes the major accomplishments that have contributed to achieving the goals of the District.

  
J. A. Stuart  
Executive Officer

## THE DISTRICT'S MISSION

The South Coast Air Quality Management District has been operating since 1977 as the local government agency responsible for air quality management. The mission of the District is to:

Attain and maintain federal and state ambient air quality standards at the earliest achievable date using the best available technology and most cost-effective control measures.

Abate the emission of hazardous and toxic pollutants.

Respond to and abate nuisances identified by citizen complaints.

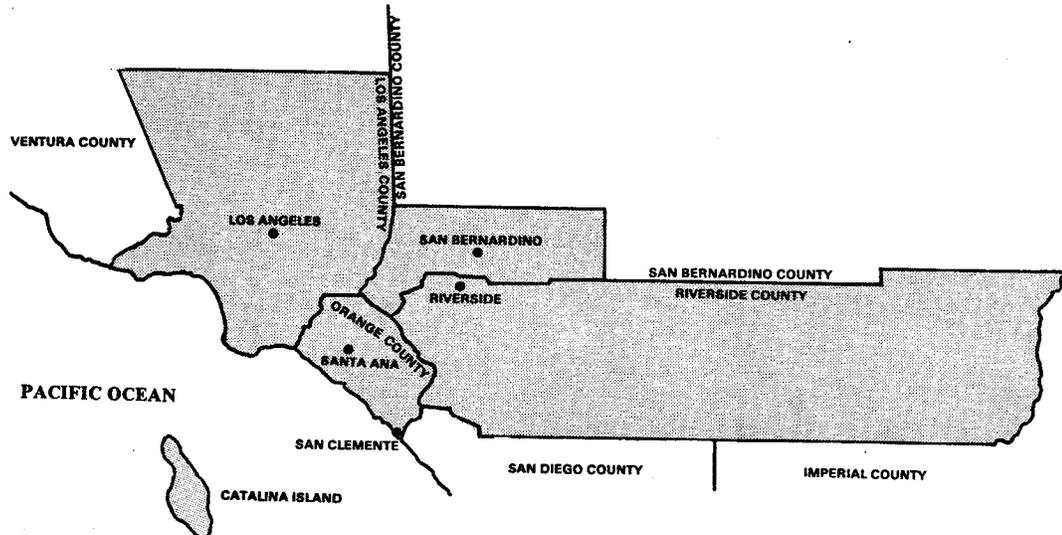
Inform the public about health hazards caused by air pollution and recommend defensive measures to reduce their impact.

This report briefly summarizes progress to date and describes the major accomplishments that have contributed to achieving the goals and mission of the District.

## ORGANIZATION

The South Coast Air Quality Management District was formed by the Lewis Air Quality Management Act, signed into state law on September 7, 1976. The District covers an area of Southern California extending from the Pacific Coast to the Arizona border, including all of the counties of Los Angeles, Orange and Riverside, and the most populous portion of the San Bernardino County lying south of the San Bernardino Mountains. More than 10 million people live within its boundaries.

## JURISDICTIONAL BOUNDARIES



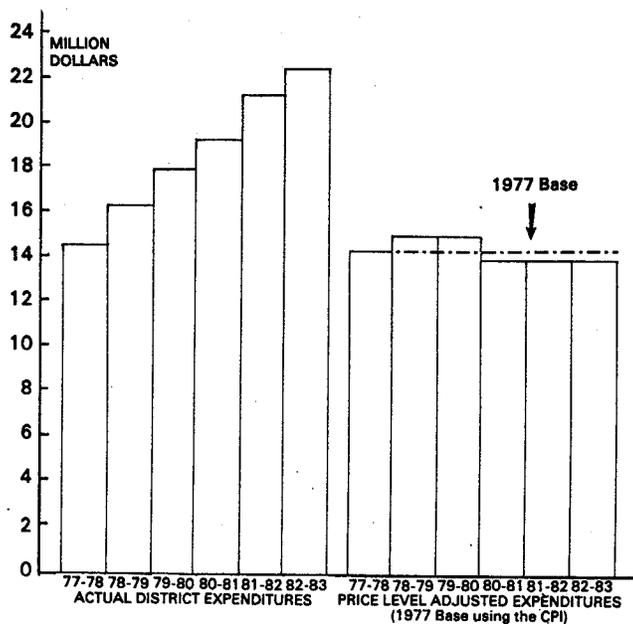
The District began operation on February 1, 1977 as a special regional agency to conduct air quality management activities using rules and regulations that reflect the best available technological and administrative practices. Further, the Lewis Act required the District Board to adopt a plan to attain the state and federal ambient air quality standards for the South Coast Air Basin as soon as possible.

The District governing board is composed of 14 members, including 11 elected officials of city and county government and 3 members appointed by elected state officials. The 11 elected officials consist of 2 members of the Los Angeles County Board of Supervisors, 2 members of the Orange County Board of Supervisors and 1 member of the Board of Supervisors of each of the other 2 counties; a member of the Los Angeles City Council, and 4 city council members representing the cities of each of the 4 counties in the District. The state officials making appointments are the Governor, Senate Rules Committee and the Speaker of the Assembly.

District operations are centralized at its Headquarters in El Monte and small branch offices are operated in Carson, Anaheim, and Colton to accommodate enforcement activities. The current total District staff is 480.

Though District expenditures have increased from \$14 million to \$22 million during the 1977-1983 period, the 1983 level is slightly below the 1977 base when it is adjusted for increases in the Consumer Price Index.

### DISTRICT EXPENDITURES



WHAT PROGRESS HAS BEEN MADE

EMISSION REDUCTION - AIR QUALITY IMPROVEMENT

The following tables show emission reductions between 1976 and 1982 and the related air quality improvements. The total emissions reductions are the result of significantly more stringent control of both stationary and vehicular sources.

Reactive organic gases (ROG) and nitrogen oxides ( $\text{NO}_x$ ) are contaminants that react in sunlight to form ozone. Reducing ROG by 30 percent and  $\text{NO}_x$  by 15 percent since 1976 has virtually eliminated Stage II ozone episode days in the Basin. It also has reduced by almost one-half the Stage I ozone episode days in the Basin and the total hours exceeding the federal ozone standard at any of the 31 air monitoring stations. The 15 percent reduction in  $\text{NO}_x$  emissions also has resulted in a substantial improvement in nitrogen dioxide levels.

A 30 percent reduction in the carbon monoxide (CO) emissions is directly reflected in reduced CO levels in the air, as shown by the 55 percent reduction in station days exceeding the standard annually from 1978 to 1982.

Sulfur dioxide ( $\text{SO}_2$ ) emissions have decreased by 40 percent since 1976. As a result, atmospheric measurements show  $\text{SO}_2$  levels well within federal standards and sulfate levels reduced so that the state standard is exceeded on only 6 percent of the sampling days throughout the year.

Total suspended particulate levels have remain unchanged, however, lead concentrations have decreased markedly and soon should comply with the standard. This improvement is the direct result of removing lead compounds from gasoline.

Charts showing changes in emissions and air quality levels are attached.

SOUTH COAST AIR BASIN  
EMISSIONS 1976 - 1982

<u>AIR CONTAMINANT</u>		<u>Avg. Tons/Day</u>		<u>Percent Reduction</u>
		<u>1976</u>	<u>1982</u>	
<u>Stationary Sources</u>				
Reactive Organic Gases	ROG	750	600	-20%
Nitrogen Oxides	NO <sub>x</sub>	450	400	-10%
Carbon Monoxide	CO	650	500	-20%
Sulfur Oxides	SO <sub>x</sub>	300	150	-50%
Total Suspended Particulates	TSP	550	550	0%
 <u>Total Sources</u>				
Reactive Organic Gases	ROG	1700	1200	-30%
Nitrogen Oxides	NO <sub>x</sub>	1300	1100	-15%
Carbon Monoxide	CO	9400	6700	-30%
Sulfur Oxides	SO <sub>x</sub>	350	200	-40%
Total Suspended Particulates	TSP	650	600	-10%

SOUTH COAST AIR BASIN  
AIR QUALITY 1978 - 1982

	<u>1978</u>	<u>1980</u>	<u>1982</u>
<u>OZONE</u>			
Station Hours Exceeding Federal Standard	10,049	8,536	5,625
Basin Days Stage I Episode	117	101	64
Basin Days Stage II Episode	23	15	2
<u>NITROGEN DIOXIDE</u>			
Basin Days Exceeding State Standard	50	44	38 (1981)
<u>CARBON MONOXIDE</u>			
Station Days Exceeding Federal Standard	400	350	180
<u>SULFUR DIOXIDE</u>			
Basin Days Exceeding Federal Standard	0	0	0
<u>TOTAL SUSPENDED PARTICULATES</u>			
Annual Geometric Mean at Key Station-Micrograms/cu. meter	138	140	157 (1981)
<u>LEAD</u>			
Highest Quarterly Avg. at Key Station-Micrograms/cu. meter	4.1	2.6	1.6
<u>SULFATE</u>			
Percentage of Sampling Days Exceeding Standard in Basin	20	17	10 (1981)

## HOW PROGRESS HAS BEEN MADE

### RULES

An active rule development program has produced more than 50 rules and regulations that require new emission sources to have the most stringent controls available and existing sources to be controlled with reasonably available control technology.

Rules were adopted to reduce reactive organic gas emissions by requiring low solvent technology for numerous industrial operations. Regulations on nitrogen oxides emissions included control requirements for residential gas-fired water heaters and central furnaces, stationary internal combustion engines, cement kilns, and glass furnaces.

A rule to control emissions of highly toxic vinyl chloride resulted in meeting the vinyl chloride air quality standard.

Other rules of particular importance include:

#### New Source Review

The New Source Review Regulation was developed as the most sophisticated regulation of its kind to control contaminants from new or modified large industrial sources. This regulation will improve and protect air quality without unnecessarily restricting development in the region. The regulation requires:

Emissions to be the lowest achievable level.

Emission increases to be offset by reductions that result in a net air quality benefit.

No new emissions to be allowed unless there is reasonable further progress in meeting air quality standards.

Air quality simulation modeling to ensure the immediate area of the new source is not adversely impacted.

The regulation also includes an emissions banking system which is intended to provide for District rules to be effective in attaining the air quality standards without unnecessarily restricting economic growth. The system enables industry to accumulate credits for emissions reductions exceeding District requirements through control techniques or equipment shutdowns. Banked emissions may be withdrawn and used as offsets internally or traded for use by a third party.

### Automobile Fueling Vapor Recovery

The District implemented a major program using special nozzles to capture the vapors released at gasoline stations when vehicles are fueled. This program achieves control on the final transfer in the multi-stage handling of gasoline from refining unit to motor vehicle.

### Emission Monitors

The District adopted the nation's first rule to require continuous monitors to be mounted on industrial stacks to measure and record emissions. More than 75 instruments are in operation, primarily to monitor sulfur and nitrogen oxides emissions from power plant and refinery stacks. Emission data are used to compile inventories, compute emission fees, and prosecute violations.

### Permit Fees Based on Emissions

The District designed and implemented the first rule in the country to assess a permit fee for stationary source emissions based on the amount and relative health effects of the emissions. This fee eliminated property tax as a major budget revenue source and improved equity by transferring this funding obligation from property owners to users of goods and services produced by equipment that emits air contaminants.

## ENGINEERING

### Permit Processing

A unified engineering staff and permit processing operation was created from four individual county air pollution control districts. Applications for new or modified installations pending permit evaluation were reduced from 11,000 to 6,000.

### Emission Inventory

A computerized system was developed in conjunction with the California Air Resources Board to produce a comprehensive emission inventory of mobile and industrial sources. Maintenance of the system provides current data to show the emissions reductions achieved by rule changes, to model air quality impacts, to plan control strategies, and to operate an emission fee program.

### Control Technology

Through cooperative efforts with industry, many developments have been made in control technology to reduce the

air quality impacts of emissions. Highlights of such activities include control of sanitary landfills and toxic wastes, cogeneration units that maximize use of waste heat, and catalytic controls for exhaust gases.

## ENFORCEMENT

### Violation Prevention Program

A program was implemented to help prevent industrial emission violations by increasing awareness of District requirements. This is accomplished through presentations on new rules to trade associations; direct notifications of upcoming compliance dates; instructions to specific industries on actions to prevent violations; and news releases listing firms prosecuted, rules violated, and penalties paid.

### Off-Hour Surveillance Program

A comprehensive continuous off-hour surveillance program instituted last year included 3,500 inspections and resulted in a higher percentage of citations during off-hours compared to regular hours.

### Emergency Action Program

The District conducts an emergency program which specifies actions to be taken by industry, business, commerce, government and the public to prevent air pollution concentrations from reaching levels which could endanger or cause significant harm to the public, and to abate such concentrations should they occur. The program requires approved plans for stationary source curtailment and transportation management to be implemented upon notification by the District.

### Violator Prosecutions

A mutual settlement civil penalty program was developed that shows improvements over the previously used criminal prosecution procedure. The civil program is more consistent and the higher penalties imposed are returned to help offset the costs of the District enforcement program.

The rate of successfully prosecuted or settled violation cases increased from 70 percent to more than 90 percent, largely as a result of improved inspector training.

### Source Testing

The District's source testing capability was increased through use of modernized equipment and procedures, including a fully-equipped computerized mobile source testing vehicle that provides immediate test results.

Airborne Hazardous Material Program

Technical assistance is being provided to local fire and police agencies in handling accidental releases of hazardous materials. A formal coordinated action plan is being developed.

Statistics on Enforcement Activities

<u>Activity</u>	<u>Fiscal Year</u>	
	<u>1980</u>	<u>1982</u>
Complaints Received	6,000	10,500
Notice to Comply	2,600	6,000
Notice of Violation	1,100	2500
Source Tests	250	500
Penalties Paid	\$165,000	\$600,000
Percentage of Successfully Completed Cases	77	90

MEASUREMENTS

Air Quality Monitoring

The air quality monitoring network was reduced from 43 to 31 stations while maintaining an effective program. A new telemetry system was installed for transmitting pollutant measurements from monitoring stations to headquarters for data validation, compliance review, and data bank entry. The system contains modern instrumentation that consistently records more than 95 percent valid data. A quality audit is conducted annually on each air monitoring analyzer.

Chemistry Laboratory

The laboratories of the four individual county agencies were merged into a modern facility with outstanding capabilities to perform chemical and analytical tests of gas, liquid, and solid samples. Through automation and streamlining of procedures, tests completed each year increased from 23,500 to 36,000, and hours per test decreased from 1.4 to 0.8.

## DISTRICT-SPONSORED LEGISLATION

### Motor Vehicle Inspection & Maintenance

This legislation provided for the state to implement a biennial motor vehicle inspection and maintenance program in urban areas not attaining air quality standards. The program would operate until 1990 for vehicles up to 20 years old. Certification of test equipment and mechanics is required.

### Gasoline Nozzles

This measure required the state to adopt performance standards to prevent gasoline spillage and recirculation during use of vapor recovery nozzles at service stations. It also authorized the District to label malfunctioning nozzles "Out of Order."

### Public Utilities

Publicly-owned utilities now are required to pay District permit and variance fees.

### Land Use

This action prohibited the Air Resources Board from requiring land use control measures to be an air quality improvement tactic in the District's Air Quality Management Plan. It leaves inclusion of such measures to the discretion of the District Board.

### Violation Penalties

This bill increased the maximum civil penalty for an air pollution violation from \$500 to \$1,000 per day. It increased the maximum criminal misdemeanor air pollution fine to \$1,000 per day, or six months in jail, or both.

### Air Resources Board Membership and Powers

This legislation increased ARB membership from five to seven. Three positions are for elected officials who are members of local control district boards. The bill specified that a district would be given an opportunity to act before the state would adopt a rule for a district.

### District Hearing Board

The efficiency and effectiveness of the Hearing Board was improved by allowing the District Board to authorize the holding of single-member hearings under special conditions; emergency variances to be granted by the Hearing Board Chairman, or designated Board member, when the Hearing Board is not in session; and the appointment of alternate Board members, facilitating the scheduling of the Hearing Board calendar.

## LEGAL

A legal staff was organized to provide a full range of services to the District Board and staff. Emphasis on supporting enforcement activities led to development of the mutual settlement-civil penalty program as an alternative to the routine use of criminal prosecution for air pollution violations. Criminal sanctions, abatement orders, or injunctive relief are sought if civil penalties do not result in compliance.

## PUBLIC INFORMATION

Through public information efforts, the District has become widely recognized as the regional air quality agency replacing local county districts. This has promoted better public understanding of the agency's mission and its air pollution control effort.

The Office of Public Advisor was created to assist the public and small businesses in their dealings with the District's administrative and regulatory processes.

The Office operates an Information Center linked by computer to the air monitoring network. This Center is used to disseminate accurate information on the current and forecast quality of the air, including an Episode Notification Program. A simplified method of reporting air quality conditions was established with the news media and now is part of every news broadcast. The Center also operates a telephone network, including toll-free numbers, for public inquiries and taped smog updates.

The Office also prepares pamphlets on air quality subjects and two bimonthly publications--Air Quality Digest, a newsletter for public distribution, and District Notes, an employee newsletter.

A 30-member Advisory Council representing industrial and environmental concerns was established to advise the District on air quality planning and technical matters.

## PLANNING

### Air Quality Management Planning

The 1979 Air Quality Management Plan and its 1982 Revision were developed as a basis for decision making. Cited as the most comprehensive and advanced air quality plan in the nation, the plan is designed to demonstrate attainment of air quality standards at the earliest possible date using all reasonably available control measures.

Sixteen short-range control strategies, which include 135 separate measures, are recommended for implementation by 1987. Long-range control strategies, based on technologies and trends estimated to occur within the next 20 years, were developed in the general groups of technology, energy use, and transportation and urban form.

### Air Quality Modeling

Air quality data gathered throughout the region have been consolidated and computerized to enable trends to be promptly identified and data bases to be prepared for air quality modeling.

The capability was developed to perform state-of-the-art air quality modeling to evaluate the localized impact of both single projects and regionwide strategies. This computerized mathematical simulation technique is a valuable tool for decision making in air quality planning, permit evaluations, and enforcement actions.

### Environmental Impact Review

An Environmental Impact Report Handbook for Air Quality was produced. The handbook is widely used by other agencies and consultants to prepare and review air impact analyses for significant proposed projects.

## ADMINISTRATION

The formation of the District created many administrative needs previously filled by County Administrative Offices. Thus, as a governmental entity unattached to other jurisdictions, the District established its own fully integrated fiscal, personnel, information systems, and administrative support operations. Special accomplishments are:

### Fiscal

Implemented a general ledger system, developed a system for preparing auditable financial statements, and implemented a payroll and accounts payable system.

### Personnel

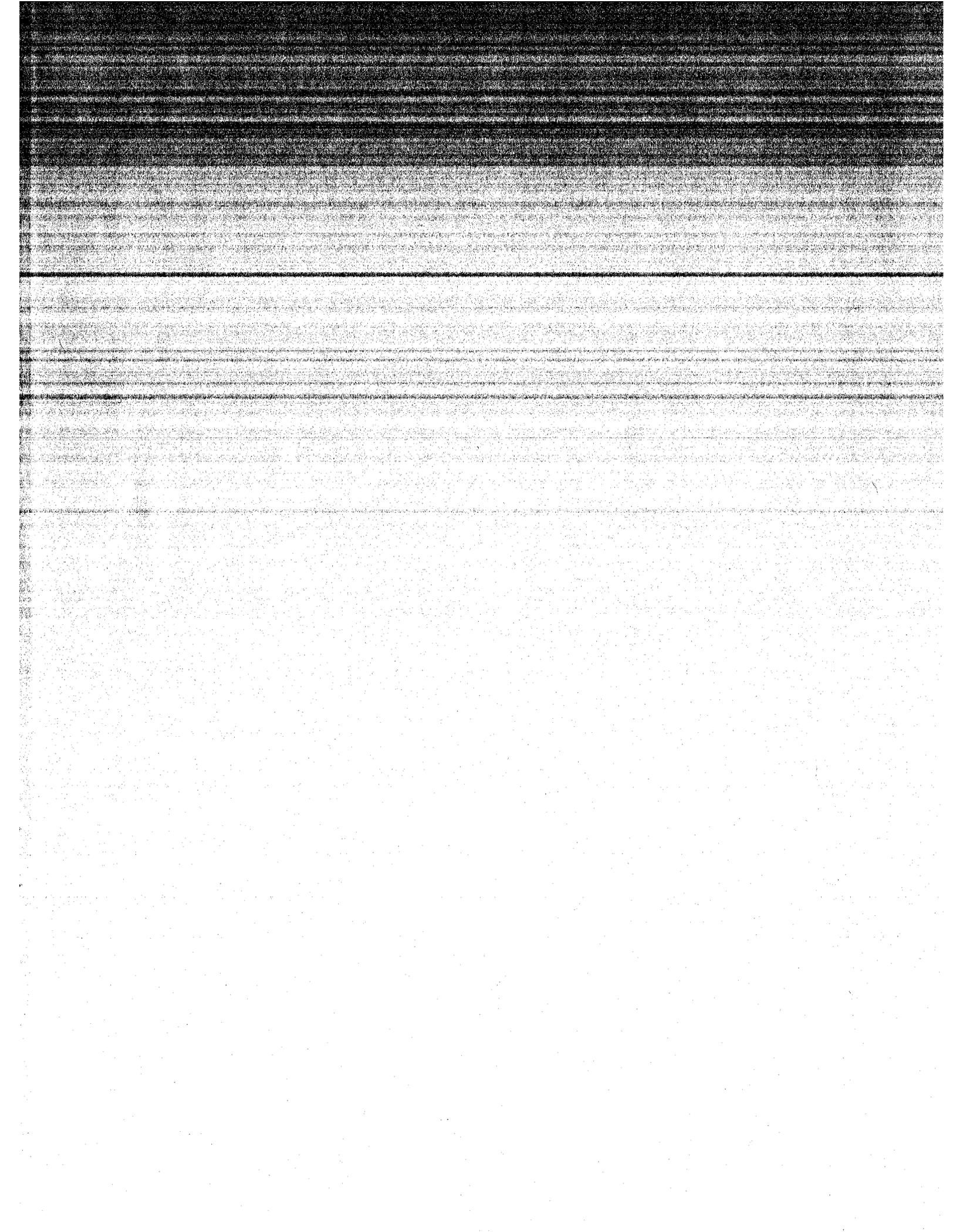
Developed a sophisticated recruitment/selection process, reclassified approximately 200 positions, coordinated approximately 100 training programs for more than 750 participants, developed a highly individualized performance appraisal program, and negotiated withdrawal from the Social Security system.

Information Systems

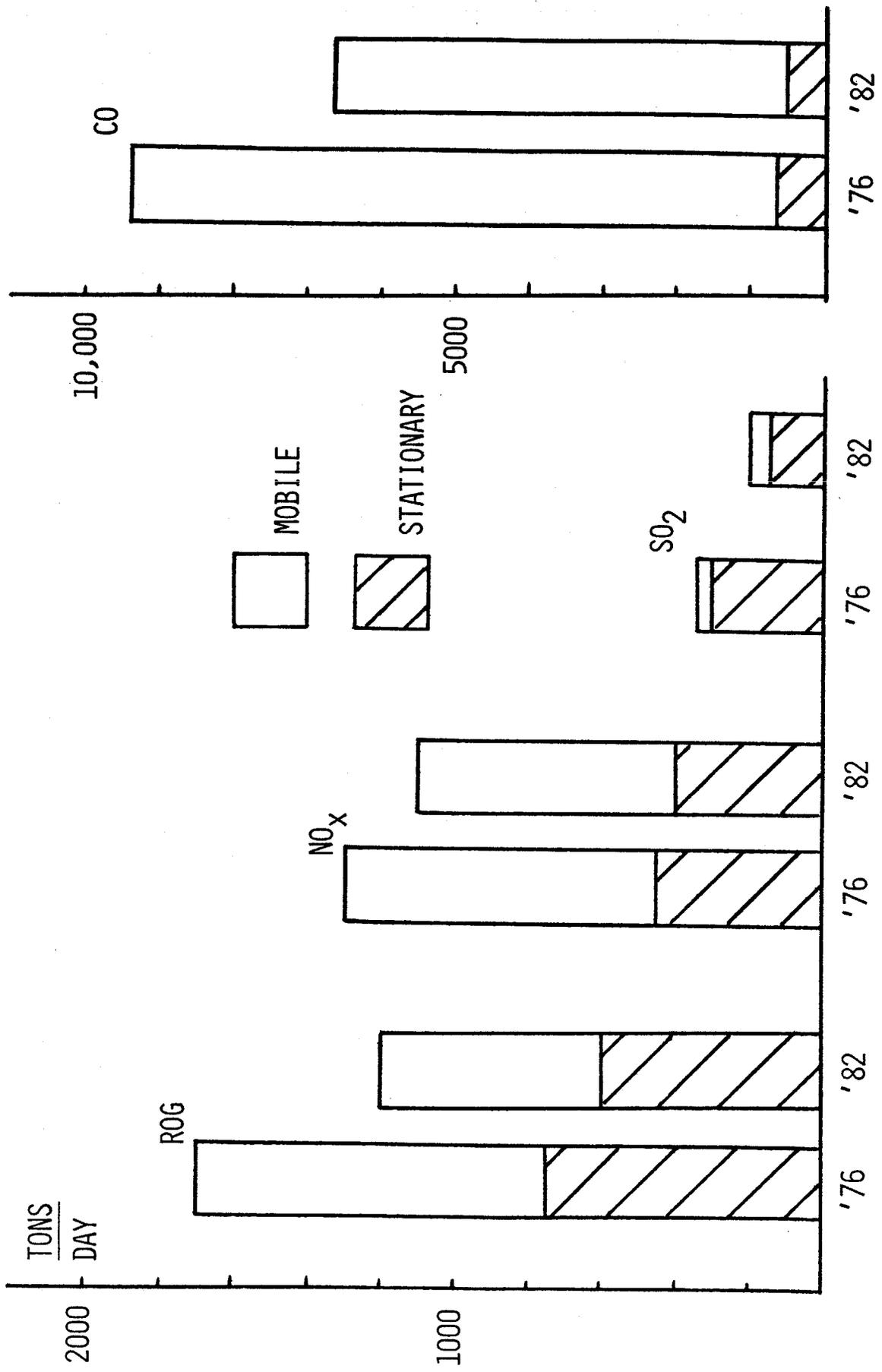
Established the Automated Equipment Information System to facilitate permit processing and emission inventory operations, and established the computerized Air Monitoring Telemetry System.

Administrative Support

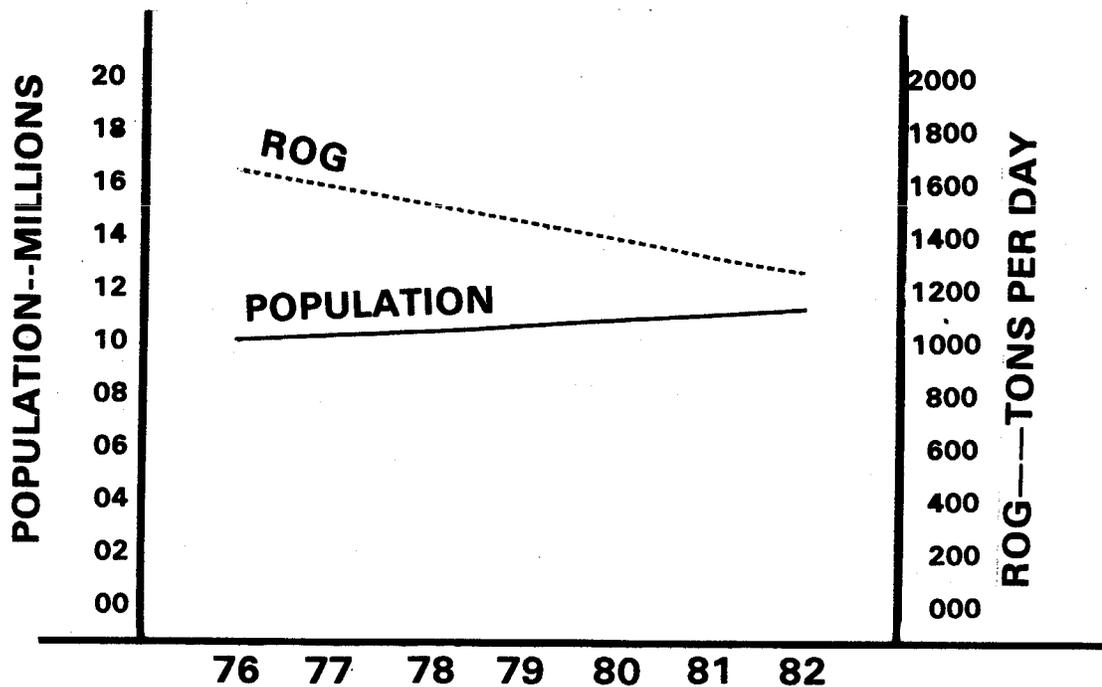
Established a Word Processing Center, and a computerized Technical Information Center providing current technical and scientific information to District staff and the public.



SOUTH COAST AIR BASIN  
EMISSIONS  
1976 - 1982



# BASIN POPULATION GROWTH AND ROG REDUCTION 1976 -1982



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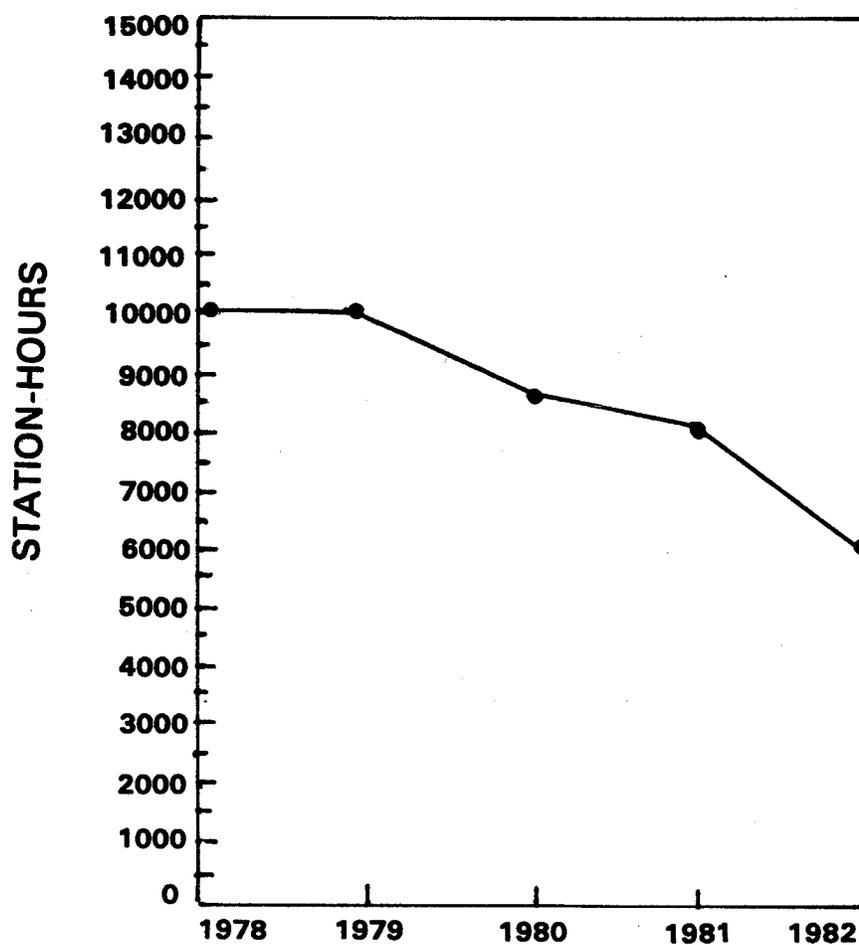
**VEHICLE MILES TRAVELED:  
1976--171 MILLION MILES DAILY  
1982--183 MILLION MILES DAILY**

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# OZONE

## BASIN'S STATION-HRS ABOVE FEDERAL STANDARD

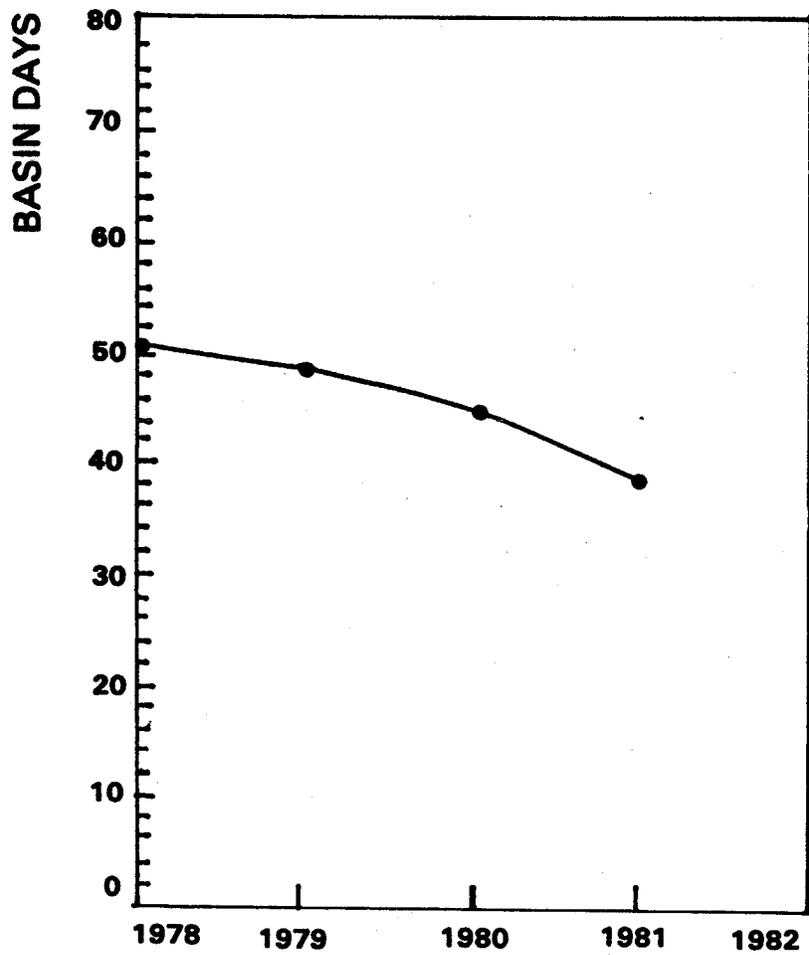
(0.12 PPM, 1-HR AVERAGE)



# NITROGEN DIOXIDE

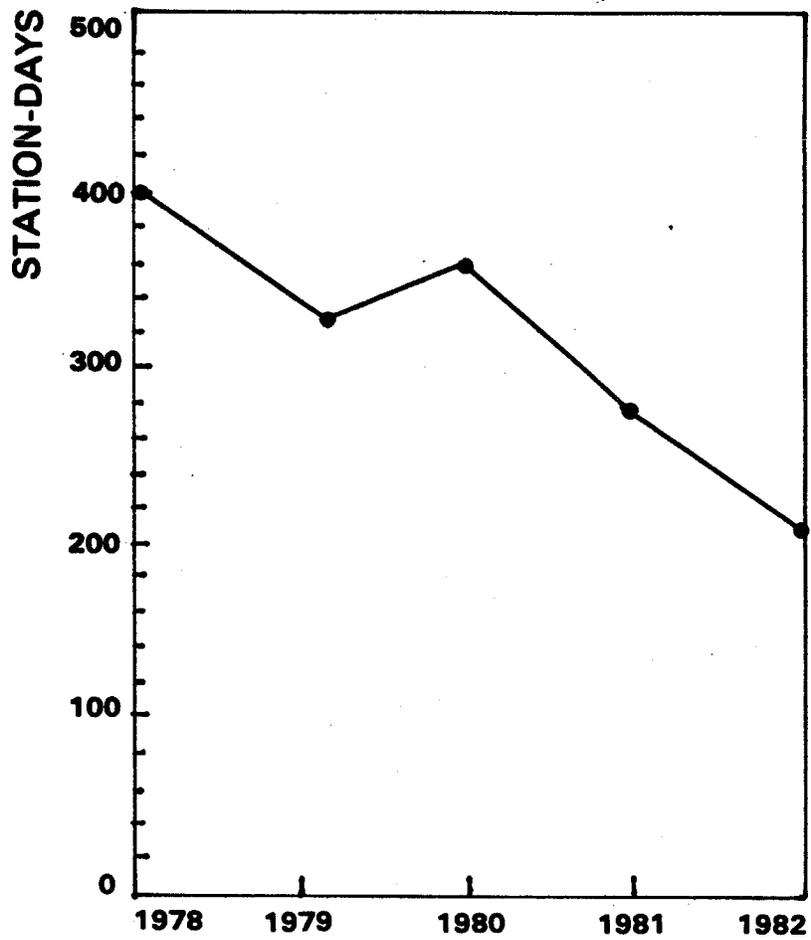
NO. OF DAYS IN BASIN  
ABOVE STATE STANDARD

(0.25 PPM. 1-HOUR AVERAGE)



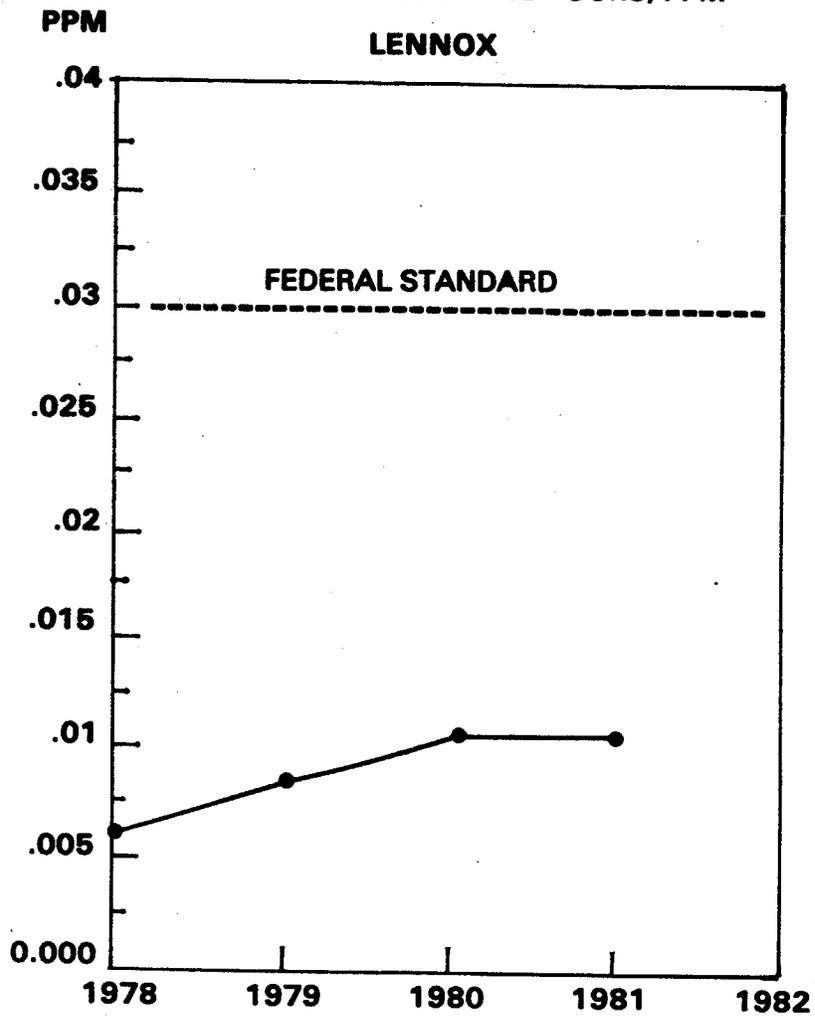
# CARBON MONOXIDE BASIN'S STATION-DAYS ABOVE FEDERAL STANDARD

(9.3 PPM, 8-HR AVERAGE)

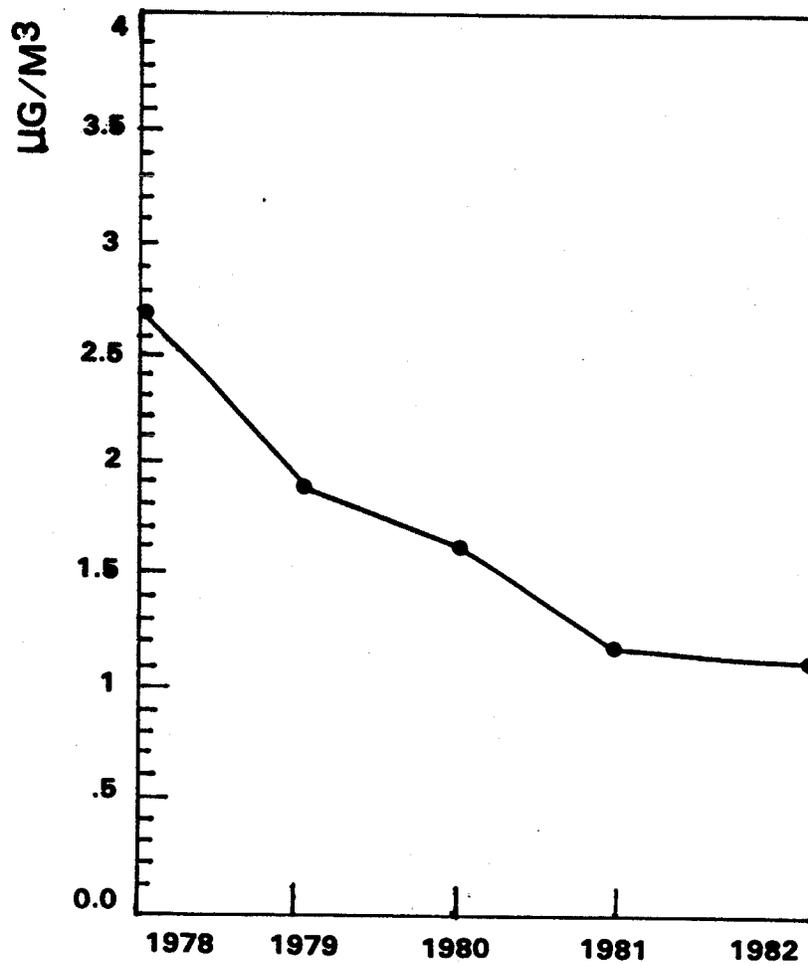


# SULFUR DIOXIDE

ANNUAL AVERAGE OF ALL HOURS, PPM



**LEAD**  
**ANNUAL AVERAGE AT**  
**LENNOX.  $\mu\text{G}/\text{M}^3$**



**SULFATE**  
**PERCENT OF DAYS IN BASIN**  
**ABOVE STATE STANDARD**  
**(25  $\mu\text{G}/\text{M}^3$ , 24-HOUR AVERAGE)**

