Final

Technical Support Document

for

the Notice of Final Rulemaking

on

Finding of Attainment
for 1-Hour Ozone in the Phoenix (Arizona) Metropolitan Area

and

Finding of Non-Applicability of Certain
Ozone Planning Requirements

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TSD for the Phoenix Attainment Finding

Technical Support Document for the Notice of Final Rulemaking on Finding of Attainment for the 1-Hour Ozone Standard in the Phoenix (Arizona) Metropolitan Area and Suspension of Planning Requirements

Section I -- General Information

A. Attainment Determinations under the Clean Air Act

Under CAA section 181(b)(2)(A), EPA must determine within six months of November 15, 1999 whether a serious ozone nonattainment area has attained the 1-hour ozone standard. If we find that the serious area has not attained the standard and does not qualify for an extension, it is reclassified by operation of law to severe.[1] Under CAA section 181(b)(2)(A), we must base our determination of attainment or failure to attain on the area's design value as of November 15, 1999.

On May 19, 2000, we proposed to find that the Phoenix metropolitan area attained the 1-hour ozone standard. See 65 FR 31859. At the same time we proposed that certain CAA planning requirements no longer applied to the Phoenix area because it was attaining the standard. The comment period for the proposal closed on June 19, 2000. We received one comment letter and fully respond to those comments later in this technical support document.

B. Demonstrating Attainment of the 1-Hour Ozone Standard

40 CFR 50.9 states that the 1-hour National Ambient Air Quality Standard (NAAQS) for ozone is attained when the expected number of days per calender year with maximum hourly average ozone concentrations above 0.12 parts per million is equal to or less than one, as determined by 40 CFR 50, Appendix H. The number of exceedances of the ozone NAAQS at a monitoring site is recorded for each calender year and is then averaged over a three-year period to determine if this average is less than or equal to one.

The expected number of exceedances, which is basically an arithmetic average, is simple to calculate if a monitoring site has a complete data set for each year; i.e., 365 daily maximum hourly average values. If there are days that do not have a valid value, it is necessary to estimate the number of exceedances per year based on the equation described in section 3 of Appendix H. However, if a monitoring site has recorded two or more exceedances of the NAAQS in each year of the three-year period, this estimation procedure is not necessary because the area will clearly not be in attainment of the NAAQS.

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[1] If a State does not have the clean data necessary to show attainment of the 1-hour standard, it may apply to EPA, under CAA section 181(a)(5), for a one-year extension of the attainment date.

CAA section 181(b)(2)(A) requires us to base our determination of attainment or failure to attain on the area's design value as of November 15, 1999. A design value is an ambient ozone concentration that indicates the severity of the ozone problem in an area and is used to determine the level of emission reductions needed to attain the standard, that is, it is the ozone level around which a State designs its control strategy for attaining the ozone standard. A monitor's design value is the fourth highest ambient concentration recorded at that monitor over the previous three-year period. An area's design value is the highest of the design values from the area's monitors.[2]

We make attainment determinations for ozone nonattainment areas using all available, quality-assured air quality data for the 3-year period up to and including the attainment date.[3] Consequently, we used all 1997, 1998, and 1999 (through November 15) quality-assured air quality data available to determine whether the Phoenix area attained the 1-hour ozone standard by November 15, 1999. From the available data, we have calculated the average number of days over the standard and design value for each ozone monitor in the Phoenix nonattainment area. See section II.B. below.

C. Ambient Air Quality Monitoring

Determining whether or not an area has attained under CAA section 181(b)(1)(A) is based on monitored air quality data. Thus, the validity of a determination of attainment depends on whether the monitoring network adequately measures ambient ozone levels in the area. We, therefore, have carefully evaluated the adequacy of the monitoring network before making this finding of attainment. See Section II. A.

[2] The fourth highest value is used as the design value because a monitor may record up to 3 exceedances of the standard in a 3-year period and still show attainment, that is, with 3 exceedances it would average 1 day over the standard per year, the maximum allowed to show attainment of the 1-hour ozone standard. If the monitor records a fourth exceedance in that period, it would average more than 1 exceedance day per year and no longer show attainment. Therefore, if a State can reduce the fourth highest ozone value to below the standard, thus preventing a fourth exceedance, then it will be able to show attainment.

[3] All quality-assured available data include all data available from the state and local/national air monitoring (SLAMS/NAMS) network as submitted to EPA's AIRS system and all data available to EPA from special purpose monitoring (SPM) sites that meet the requirements of 40 CFR 58.13. See *Memorandum*, John Seitz, Director, OAQPS, to Regional Air Directors; "Agency Policy on the Use of Ozone Special Purpose Monitoring Data," August 22, 1997 (SPM memo).

Section II. Attainment Finding

A. Adequacy of the Ambient Air Quality Monitoring Network

Requirement: Clean Air Act §107(d)(3) (E)(i)

40 CFR 50.9 (National 1-hour primary and secondary ambient air quality standards for ozone)

40 CFR 50, Appendix H (Interpretation of the 1-hour primary and secondary national ambient air quality standards for ozone)

40 CFR 58, Appendix D, "Network Design for State and Local Air Monitoring Stations (SLAMS), National Air Monitoring Stations (NAMS), and Photochemical Assessment Monitoring Stations (PAMS)

Primary Guidance Documents: Guideline for the Interpretation of Ozone Air Quality Standards (EPA-450/4-79-003, January 1979)

Memorandum from William G. Laxton, Director, Technical Support Division, Office of Air Quality Planning and Standards to Regional Air Directors, "Ozone and Carbon Monoxide Design Value Calculations", June 18, 1990

Guideline on Ozone Monitoring Site Selection (EPA-454/R-98-002, August 1998)

What are the statutory, regulatory and policy requirements?

In order to make a valid assessment of an area's attainment status, the following must be true of the monitoring network:

1. The area needs to have an ozone monitoring network in place that meets the design requirements of 40 CFR 58, Appendix D.

2. The network needs to utilize ozone monitoring equipment designated by U.S. EPA as reference or equivalent methods.[4]

[4] A reference method is an air sample collection and analysis method that follows the procedures detailed in the appendices to 40 CFR 50. An equivalent method is an air sampling collection and analysis method that does not follow the reference procedures in 40 CFR 50, but

3. The agency or agencies operating the network must have a quality assurance plan in place that meets the requirements of U.S. EPA regulations contained in 40 CFR 58, Appendix A.

4. For urbanized areas with populations greater than 200,000, at least two monitoring sites shall be designated as National Air Monitoring Stations (NAMS).

Does the Ozone Monitoring Network meet the statutory and regulatory requirements?

1. Ozone monitoring network in place must meet the network design requirements of 40 CFR 58, Appendix D.

40 CFR 58, Appendix D details the requirements for designing an ambient monitoring network for ozone. Further guidance is provided in the document "Guideline on Ozone Monitoring Site Selection" (EPA-454/R-98-002, August 1998). There are six basic objectives that need to be met when designing a monitoring network. They are: 1) to determine the highest concentrations expected to occur in the area covered by the network; 2) to determine representative concentrations in areas of high population density; 3) to determine the impact on ambient pollution levels of significant sources or source categories; 4) to determine general background concentration levels; 5) to determine the extent of regional pollution transport among populated areas and in support of secondary [National Ambient Air Quality] standards; and 6) to determine the welfare-related impacts in more rural and remote areas (such as visibility impairment and effects on vegetation).

Closely associated with the monitoring objectives is the concept of "spatial scale of representativeness." The goal in siting monitoring stations is to correctly match the spatial scale represented by the sample of monitored air with the spatial scale most appropriate for the monitoring objective of the station. Thus, spatial scale of representativeness is described in terms of the physical dimensions of the air parcel nearest to a monitoring station throughout which actual pollutant concentrations are reasonably similar. The six spatial scales defined in EPA regulations are as follows:

Microscale - defines an area up to 100 meters from the sampler.
Middle Scale - defines an area ranging from 100 meters to 0.5 kilometers from the sampler.
Neighborhood Scale - defines an area ranging from 0.5 to 4.0 kilometers from the sampler.
Urban Scale - defines an area ranging from 4 to 50 kilometers from the sampler. This scale usually requires more than one site for definition.
Regional Scale - defines usually a rural area of reasonably homogenous geography and extends from tens to hundreds of kilometers.

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has been certified by us as obtaining "equivalent" results.

National and Global Scales - these measurement scales represent concentrations characterizing the nation and the globe as a whole.

The relationship between the six monitoring objectives and the scales of representativeness that are generally most appropriate for that objective are summarized in table 1:

Table 1 - RELATIONSHIP AMONG MONITORING OBJECTIVES AND SCALE OF REPRESENTATIVENESS

MONITORING OBJECTIVE	APPROPRIATE SITING SCALES
Highest Concentration	Micro, Middle, Neighborhood
Representative Concentrations	Neighborhood, Urban
Source Impact	Micro Middle, Neighborhood
Background	Neighborhood, Urban, Regional
Regional Transport	Urban/regional
Welfare-related Impacts	Urban/regional

The final regulatory requirement concerns the number of monitors in a network. The ambient monitoring networks operated by State and local agencies are referred to as SLAMS (State and Local Air Monitoring Station) networks. A subset of the SLAMS sites are also designated as National Air Monitoring Stations (NAMS). NAMS sites are selected to provide data for national policy analyses and trends and for reporting to the public on air quality in major metropolitan areas. Emphasis is given to urban areas with populations of at least 200,000. Urbanized areas will generally require only two ozone NAMS. One NAMS would be representative of maximum ozone concentrations. The second NAMS should be representative of high population areas on the fringes of the central business district along the predominant summer/fall daytime wind direction. Two ozone NAMS will be sufficient in most urban areas since the spatial gradients for ozone generally are not as sharp as for other criteria pollutants.

It is important to understand that while EPA regulations do require a minimum number of NAMS sites in certain urban areas, these same regulations contain no criteria for determining the total number of stations in SLAMS networks. The optimum size of a particular SLAMS network involves tradeoffs among data needs and available resources that EPA believes can best be resolved during the network design process.

The last type of monitoring site is referred to as a Special Purpose Monitor (SPM) site. SPMs are monitoring sites that may or may not meet all of EPA requirements. State and local agencies generally operate SPMs for special studies where the sites are not intended to be permanent or when agencies are trying to determine the appropriateness of new monitoring

locations. Data collected at SPM sites that meet all of EPA's siting and quality assurance regulations are valid for use in regulatory actions with some exceptions.[5]

The following table summarizes the ozone monitoring network in the Phoenix area:

TABLE 2: OZONE MONITORING SITES IN THE PHOENIX PLANNING AREA

SITE NAME	OPERATING AGENCY	SITE DESIGNATION	MONITORING OBJECTIVE	SPATIAL SCALE
Blue Point	MCESD	NAMS	High Concentration	Urban
Central Phoenix	MCESD	NAMS	Population Exposure	Neighborhood
Fountain Hills	MCESD	NAMS	High Concentration	Neighborhood
South Scottsdale	MCESD	NAMS	Population Exposure	Neighborhood
Emergency Management	MCESD	SLAMS	Population Exposure	Neighborhood
Falcon Field	MCESD	SLAMS	Population Exposure	Urban
Humboldt Mountain	MCESD	SLAMS	High Concentration	Regional
Maryvale	MCESD	SLAMS	Population Exposure	Neighborhood
Mesa	MCESD	SLAMS	Population Exposure	Neighborhood
Mount Ord	MCESD	SLAMS	High Concentration	Regional
North Phoenix	MCESD	SLAMS	Population Exposure	Regional
Pinnacle Peak	MCESD	SLAMS	High Concentration	Urban
South Phoenix	MCESD	SLAMS	Population Exposure	Neighborhood
West Chandler	MCESD	SLAMS	Population Exposure	Neighborhood
West Phoenix	MCESD	SLAMS	Population Exposure	Neighborhood
Lake Pleasant	MCESD	SLAMS	High Concentration/ Rural Area Exposure	Urban
Glendale	MCESD	SLAMS	Population Exposure	Neighborhood
Rio Verde	MCESD	SPM	High Concentration	Urban
Palo Verde	ADEQ	SPM	Background	Urban
JLG Supersite	ADEQ	SPM	Population Exposure	Neighborhood

[5] See the memorandum "Agency Policy on the Use of Special Purpose Monitoring Data", August 22, 1997 from John S. Seitz, Director, Office of Air Quality Planning and Standards to Regional Air Directors.

The ozone monitoring network in the Phoenix area clearly meets the network design requirements in terms of the density of the network, the monitoring objectives and the use of appropriate spatial scales. The MCESD operates four sites designated as NAMS, which exceed the minimum requirement of two sites. The Central Phoenix site's description as a NAMS site monitoring for high population exposure on the fringe of the central business district may no longer be accurate due to the growth of the metropolitan area, but it is one of the original monitoring sites in the County and has been in operation for over 30 years. The other three NAMS sites: Blue Point, Fountain Hills, and South Scottsdale all meet the design requirements for NAMS.

EPA regulations state that monitoring networks should be designed to meet six monitoring objectives. As seen in Table 2, the ozone monitoring network in the Phoenix area meets only four of the six objectives. It should be understood that EPA regulations apply nationwide and for all criteria pollutants. Urban areas in various parts of the country will have different geographic characteristics and the various criteria pollutants also behave differently and have different emission sources. Therefore in evaluating whether a particular pollutant network design meets the requirements in 40 CFR 58, Appendix D we need to consider the unique qualities of both the area and the pollutant of concern.

Ozone is not directly emitted by any type of pollution source but results from complex photochemical reactions involving organic compounds, oxides of nitrogen, and solar radiation. Therefore, when monitoring ambient ozone concentrations, the third monitoring objective, determining the impact on ambient pollution levels of significant sources or source categories, is not applicable.

The fifth monitoring objective, determining the extent of regional pollutant transport between populated areas, also does not apply in the Phoenix area. The Phoenix metropolitan area is, geographically speaking, relatively isolated. The nearest major cities would be Casa Grande and Tucson, both to the southeast of Phoenix and about 35 and 100 miles away respectively. Neither city is in line with the prevailing wind direction, which is from the south/southwest, in the Phoenix area, and ozone transport is not appreciable enough to cause any exceedances of the 1- hour NAAQS in these areas. Nevertheless, ozone monitors in the south and southeast portions of the Phoenix area, even though their stated objective is to monitor for representative population exposure, can provide information on ozone transport out of the Phoenix area in this direction.

One final point regarding the ozone monitoring network in the Phoenix area is that a portion of the ozone SLAMS sites only operate on a seasonal basis. Eight of the 14 SLAMS sites operated by the MCESD operate only between April 1 and October 31. The four NAMS sites and six of the highest reading SLAMS sites continue to operate on an annual schedule. Maricopa County requested this waiver from EPA regulations in order to allow them to upgrade instruments, perform preventative maintenance, expand the life expectancy of the ozone monitoring equipment, reduce replacement costs, and better utilize their quality assurance and

quality control resources. EPA Region 9 approved this waiver for two primary reasons. First, exceedances of the 1-hour ozone NAAQS during the period of November 1 through March 31 in the Phoenix area are very rare and any exceedances that did occur during the late fall and winter months would more than likely be captured by one or more of the 10 annually operating sites. Second, with monitoring resources not expected to increase, we believe it is appropriate to allow agencies to reasonably deviate from the monitoring regulations in order to conserve scarce resources as long as the quality of the data collected does not suffer. In fact, since the MCESD will be able to perform more extensive maintenance on the monitoring equipment during the winter months, there is less chance that equipment will fail during the spring, summer, and early fall months, when collecting ambient ozone data is more critical. The eight sites operating on a seasonal schedule are Emergency Management, Falcon Field, Glendale, Humboldt Mountain, Lake Pleasant, Maryvale, Rio Verde, and West Chandler.

2. Network must use ozone monitoring equipment designated by U.S. EPA as reference or equivalent methods

Ozone in the ambient atmosphere is measured using methods designated by EPA under the requirements of 40 CFR part 53. All of the ozone methods used in the Phoenix area are designated as either reference or equivalent methods. The majority of ozone monitoring sites in the area are operated by the Maricopa County Environmental Services Department (18 sites). The Arizona Department of Environmental Quality (ADEQ) operates an additional two ozone monitoring sites. Both the MCESD and the ADEQ have Quality Assurance Plans in place that have been approved by us.

Based on the fact that the ozone monitoring network meets all of the relevant EPA requirements regarding network design, monitoring methods, and quality assurance, the ambient ozone data collected by the MCESD and ADEQ is valid for determining the ozone attainment status of the Phoenix area.

3. The agency or agencies operating the network must have a quality assurance plan in place that meets the requirements of U.S. EPA regulations contained in 40 CFR part 58, Appendix A.

Quality Assurance (QA) plans for ambient monitoring networks must meet the requirements of U.S. EPA regulations in 40 CFR part 58, Appendix A and U.S. EPA guidance contained in the documents "Quality Assurance Handbook for Air Pollution Measurement Systems," Volumes I and II. QA plans are developed by State and local agencies and submitted to EPA for approval. QA plans are updated as necessary; e.g., when an agency begins utilizing a new measurement method.

MCESD's most recent QA plan was submitted to U.S. EPA in May of 1998 and is currently under review by Region 9. Their previous QA plan was submitted in October 1993 and approved by EPA in November 1993. ADEQ's QA plan was approved in February 1989.

B. Phoenix Air Quality as of November 15, 1999

1. Average Number of Days Over the Standard

40 CFR 50.9 states that the NAAQS for ozone is attained when the expected number of days per calender year with maximum hourly average ozone concentrations above 0.12 parts per million is equal to or less than one, as determined by 40 CFR part 50, Appendix H. The number of exceedances of the ozone NAAQS at a monitoring site is recorded for each calender year and is then averaged over a three-year period to determine if this average is less than or equal to one.

The expected number of exceedances, which is basically an arithmetic average, is simple to calculate if a monitoring site has a complete data set for each year; i.e., 365 daily maximum hourly average values. If there are days that do not have a valid value, it is necessary to estimate the number of exceedances per year based on the equation described in section 3 of Appendix H. However, if a monitoring site has recorded two or more exceedances of the NAAQS in each year of the three year period, this estimation procedure is not necessary because the area will clearly not be in attainment of the NAAQS.

As discussed previously in this document, EPA regulations state that the NAAQS for ozone is attained when the expected number of days per calender year with maximum hourly average ozone concentrations above 0.12 parts per million is equal to or less than one, as determined by 40 CFR part 50, Appendix H. The number of exceedances of the ozone NAAQS at a monitoring site is recorded for each calender year and is then averaged over a three-year period to determine if this average is less than or equal to one. The following table (Table 3) lists the ozone monitoring sites in the Phoenix area, the four highest daily maximum 1-hour ozone concentrations and number of days over the standard for each during the period 1997 through 1999.

TABLE 3: Four Highest Ozone Concentrations/Days Over the Standard 1997 -1999
(All values in ppm)

MONITOR SITE	1st HIGHEST CONCENTRATION	2nd HIGHEST CONCENTRATION	3rd HIGHEST CONCENTRATION	4th HIGHEST CONCENTRATION	NUMBER OF DAYS OVER THE STANDARD
Blue Point	.115	.112	.108	.107	0
Central Phoenix	.110	.107	.104	.103	0
Fountain Hills	.123	.114	.114	.113	0
South Scottsdale	.106	.101	.099	.098	0
Emergency Management	.118	.110	.110	.109	0
Falcon Field	.112	.105	.104	.101	0

Humboldt Mountain	.116	.103	.101	.100	0
Maryvale	.114	.113	.112	.101	0
Mesa	.125*	.112	.110	.109	0
Mount Ord	.108	.106	.106	.104	0
North Phoenix	.124	.120	.115	.113	0
Pinnacle Peak	.120	.119	.114	.112	0
South Phoenix	.107	.102	.101	.100	0
West Chandler	.103	.097	.096	.094	0
West Phoenix	.118	.115	.113	.112	0
Lake Pleasant**	.104	.098	.096	.094	0
Glendale	.109	.102	.099	.098	0
Rio Verde	.113	.112	.105	.104	0
Palo Verde	.099	.099	.092	.091	0
JLG Supersite	.102	.099	.099	.098	0

Source: U.S. EPA's Aerometric Information Retrieval System/Air Quality Subsystem

* According to the MCESD this value was actually recorded as 0.1248 ppm. Neither the ADEQ nor MCESD consider this an exceedance of the NAAQS. The AIRS/AQS database rounded this value to 0.125 and does count this as an exceedance. However, EPA rounding convention is that recorded concentrations shall be rounded to the number of significant digits used in specifying the level of the ambient air quality standard. The digit to the right of the last significant digit determines the rounding process. If this digit is greater than or equal to 5, the last significant digit is rounded up. The insignificant digits are truncated. In this case, after truncation 0.1248 would become 0.124, which would then round to 0.12 which does not exceed the 1-hour ozone NAAQS.

**The Lake Pleasant monitoring station began operation in 1998.

As can be seen from Table 3, none of the ozone monitoring sites operating in the Phoenix area has exceeded the 1-hour ozone standard during the period of 1997-1999. Therefore the Phoenix area meets the requirements of 40 CFR 50.6 and is currently in attainment of the 1-hour ozone NAAQS.

2. Design Value Determination

Guidance on calculating design values is provided in "Guideline for the Interpretation of Ozone Air Quality Standards" (January 1979, EPA-450/4-79-003). More recent guidance is provided in the memorandum "Ozone and Carbon Monoxide Design Value Calculations", June 18, 1990, from William G. Laxton, Director, Technical Support Division, Office of Air Quality Planning and Standards, to the Regional Air Directors.

The form of the 1-hour ozone standard allows a site to record three exceedances of the standard in a three-year period and still be in attainment of the standard. A fourth exceedance would cause the site to be in violation of the standard. Therefore, the fourth highest value is the design value for a particular site, assuming three complete years of data. If only two complete years of data are available then the third highest value is used and if only one complete year is available than the second highest value is used. It should be noted that the high values for a year are considered even if the data for that year did not satisfy the 75% data completeness criterion.

The first step in developing the design value for a nonattainment area is to calculate the design value for each monitoring site that is not attaining the ozone standard. The highest of these site specific design values then becomes the design value for the area. For those sites that do not have three complete years[6] of data an alternative to the fourth highest value is used for a design value. The Laxton memo provides a procedure to calculate which observed value should be used as the design value.

Table 4 provides information on data completeness and the design values for the 20 ozone monitoring sites operating in the Phoenix area.

TABLE 4 - DESIGN VALUES FOR OZONE MONITORING SITES IN THE PHOENIX AREA

MONITORING SITE	1997 % data completeness	1998 % data completeness	1999 % data completeness	DESIGN VALUE (ppm)
Blue Point	90%	97%	98%	0.107
Central Phoenix	98%	96%	96%	0.103
Fountain Hills	99%	99%	99%	0.113
South Scottsdale	94%	95%	95%	0.098
Emergency Management	96%	97%	99%	0.109
Falcon Field	97%	98%	98%	0.101
Maryvale	79%	97%	99%	0.101
Mesa	96%	100%	97%	0.109
West Phoenix	89%	100%	98%	0.112

[6] In general, data sets for a particular monitor that have valid values for 75% of the required sampling days are deemed complete. See "Guideline for the Interpretation of Ozone Air Quality Standards", section 2.2 (EPA-450/4-79-003, January 1979)

North Phoenix	97%	98%	97%	0.113
Pinnacle Peak	97%	99%	99%	0.112
South Phoenix	94%	96%	99%	0.1
West Chandler	95%	97%	99%	0.094
Palo Verde	89%	88%	98%	0.091
JLG Supersite	80%	83%	100%	0.098
Glendale	72%	99%	93%	0.099
Mount Ord	65%	93%	98%	0.106
Humboldt Mountain	43%	96%	97%	0.101
Lake Pleasant	NO DATA	89%	97%	0.096
Rio Verde*	40%	5%	60%	0.112

Source: U.S. EPA's Aerometric Information Retrieval System/Air Quality Subsystem

* The Laxton memo provides the procedure for determining the design value for monitoring sites that have no years of complete data. In the case of the Rio Verde site the design value is the second highest value recorded during the 1997-1999 period.

Based on Table 4, the monitoring sites with the highest design value are Fountain Hills and North Phoenix which both have design values of 0.113 ppm. Therefore, the design value for the Phoenix area, based on ozone air quality data collected during the period 1997 - 1999 is 0.113 ppm.

3. Conclusion

Based on a review of the monitoring data from the area's SLAMS/NAMS network, the Phoenix area clearly attained the ozone standard by the attainment date of November 15, 1999. The standard is attained at a particular monitoring site when the expected number of exceedances of the ozone standard per year is less than or equal to one based upon three years of data. None of the ozone monitoring sites in the Phoenix area exceeded the 1-hour ozone NAAQS in the three-year period 1997-1999.

C. Continuation of Attainment

The Phoenix area continues in attainment of the 1-hour ozone standard through 2000. Ozone data reported to EPA by MCESD and ADEQ show that the monitoring network was fully operational through the 2000 ozone season, data completeness met EPA standards, and that no exceedances of the 1-hour ozone standard were recorded. A summary of the 2000 data can be found in Appendix C. The average number of days over the standard during the 3-year period from September 30, 1997 to September 30, 2000 is zero.

Section III -- Response to Comments Received on the Proposal

The proposed finding of attainment and determination of the nonapplicability of certain CAA requirements for the Phoenix metropolitan area was published on May 19, 2000 at 65 FR 31859. The comment period for the proposal closed on June 19, 2000. We received one comment letter on our proposed finding of attainment and proposed determination that certain CAA requirements no longer apply to the Phoenix area because of the attainment finding. This comment letter was submitted by the Arizona Center for Law in the Public Interest (ACLPI).

A. Finding of Attainment

In its comment letter, ACLPI expressed concerns about the adequacy of the Maricopa County ozone monitoring network including the representativeness of monitoring sites in the area's network, the County's actions in response to past program evaluations of its air program by EPA, and the operating schedule of the area's network.

In making the finding that the Phoenix metropolitan nonattainment area has attained the 1-hour ozone standard, we evaluated the ozone monitoring network operated by the Maricopa County Environmental Services Department (MCESD) as it existed during the attainment period of 1997 - 1999 and concluded that the network meets all of the requirements contained in our regulations and thus is adequate for making a determination of attainment. See section II.A. of this TSD.

Comment: ACLPI comments that EPA's 1989 evaluation of the Maricopa County Air Pollution Control Program found that the then-current ozone network did not include a site that met the 40 CFR part 58 requirements for a maximum concentration monitor. ACLPI notes that Phase I of a report prepared by Maricopa County consultant Aeroenvironment, Inc. in March of 1993 discussed EPA's finding that the County network lacked a maximum concentration ozone site but did not recommend a new site to address this deficiency; the final recommendation was to locate a site at or near the Arizona Department of Environmental Quality's (ADEQ)'s Vehicle Emission Laboratory special purpose monitoring (SPM) site.

Response: The ozone network in the Phoenix nonattainment area currently has seven sites located to capture maximum concentrations of ozone. The sites are Blue Point, Fountain Hills, Humboldt Mountain, Mount Ord, Pinnacle Peak, Lake Pleasant, and Rio Verde. These sites are located in the northern/eastern side of the PPA, which is where the highest ozone concentrations are expected to occur. That this area is where maximum ozone concentrations are expected to occur is supported by ozone air quality modeling conducted by ADEQ. See "Serious Area Ozone State Implementation Plan for Maricopa County," ADEQ, submitted to EPA on December 14, 2000, pp. 1-2. With the exception of Lake Pleasant, all of these sites were operating during the attainment period 1997-1999; therefore, we concluded that the monitoring network met the requirement for a maximum concentration monitor. See Table 2, Ozone Monitoring Sites In The Phoenix Planning Area, and Table 4, Design Values for the Ozone

Monitoring Sites in the Phoenix Area" in this TSD.

Comment: ACLPI asserts that EPA's July 1992 re-evaluation of the program found that the inadequacies noted in the 1989 program evaluation had still not been fully addressed.

Response: We agree with ACLPI's assertion that in 1992 the deficiencies in the ozone network noted in the 1989 program evaluation were still not addressed. However, the County has since made changes to its monitoring program and the current ozone monitoring network operated by the County addresses the concerns in our original 1989 program evaluation. Evidence of these corrections can be seen in the County's annual ambient monitoring network reviews, which are available for public review. In addition to the availability of these documents, MCESD has had annual public meetings to review these network documents and solicit comments from the concerned public on the adequacy of the network.

Until 1997, one of our major concerns with the County's ozone network was the designation of certain ozone sites. Many sites were still designated as SPMs, however the data collected at these SPMs were still valid since they met all of the requirements in EPA regulations. See SPM memo. The County has since designated all of their SPM ozone monitors as State and Local Air Monitoring Stations (SLAMS) and has requested that we designate two of these sites, Blue Point and Fountain Hills, as National Air Monitoring Stations (NAMS).

Comment: ACLPI comments that upon reviewing Phase II of the Aeroenvironment report issued in May of 1993, EPA noted that the report did not contain any specific recommendations on addressing the ozone network deficiencies, and the Agency commented that "[i]t was not apparent in the report what, if any, the monitoring goals of the [County] are."

Response: We agree with ACLPI that in 1993 we still had concerns about the adequacy of the County's network. That was more than seven years ago and since then Maricopa County has made significant improvements to its monitoring network and we have now determined that the ozone network operating in the Phoenix nonattainment area meets all our requirements.

Comment: ACLPI asserts that an October 1993 draft ozone evaluation issued by the County indicated that ozone pollution tends to concentrate to the east of the Phoenix metropolitan area and it proposed the establishment of additional SPMs, but only some of the proposed sites were eventually established.

Response: MCESD operates 18 monitoring sites in the Phoenix nonattainment area. Two additional sites are operated by ADEQ. The County's most recent annual network reviews in 1998 and 1999 demonstrate that the network was revised to include SLAMS sites in the eastern and northeastern portions of the Phoenix nonattainment area. These sites--Blue Point, Fountain Hills, Rio Verde, Mount Ord, and Falcon Field--do provide representative ozone air quality information for the this portion of the area.

Comment: ACLPI states that in a letter to the County dated February 10, 1997, EPA directed the County to designate certain SPM sites as permanent SLAMS and as of October 1997, the County had still not complied with this direction.

Response: ACLPI is correct; as of October 1997 the County had not addressed our recommendation to redesignate certain SPM sites as SLAMS. However, as discussed in the County's 1998 and 1999 Annual Network Reviews, those sites have since been designated as SLAMS sites.[7] The County has further requested that EPA designate the Fountain Hills and Blue Point sites as NAMS, which would ensure the long-term operation of these sites.

Even though these sites were not designated as SLAMS sites during part of the 1997-1999 period we reviewed to make the attainment finding, the sites meet all EPA monitoring and quality assurance regulations; thus, the data collected at them is valid and can be used in regulatory decisions such as determination of attainment status under applicable EPA policy. See SPM memo. We note that we used data from these sites in making our 1997 determination to deny the State's request for a one-year extension of the area's then applicable attainment date of November 15, 1996. 62 FR 46229, 46232 (September 2, 1997)

Comment: ACLPI claims that EPA's proposed rulemaking contains no evidence that the County has made changes to its ozone network in response to the inadequacies documented by EPA in the past. It also asserts that the County and the State have apparently discontinued the use of certain monitoring sites, including Black Canyon, Central Arizona Project, Estrella Park, North Scottsdale, Papago Park (Civil Defense), Salt River Pima, Vehicle Emissions Laboratory, and Vehicle Emissions Station. ACLPI found particularly troubling is the absence of the Papago Park monitor, which recorded the highest ozone violation in 1995.

Response: In determining the adequacy of the Maricopa County ozone monitoring network, we made the decision to evaluate the network as it existed during the period of 1997-1999. We believed that this was a more reasonable approach rather than reviewing all of the past inadequacies and determining whether the County addressed each one. These past inadequacies were failures of the monitoring network to meet our monitoring regulations. By concluding that the network now meets our monitoring regulations, we effectively concluded that MCESD has corrected these inadequacies. In hindsight we acknowledge that this may have caused some

[7] State and local air agencies are required to evaluate their ambient monitoring networks on an annual basis and submit those network reviews to U.S. EPA for comment (40 CFR 58.20). The network reviews generally contain data summaries, descriptions of the various pollutant monitoring networks operated by agencies and details on any proposed changes to the networks, e.g. the establishment of new sites, shut down of existing sites and proposed changes in site designations such as SPM to SLAMS, SLAM to NAMS. For the past three years the MCESD has used the network review process to solicit public comment on their ambient pollutant networks by holding a public meeting and establishing a public comment period.

confusion on the part of the commenting public.

As stated previously, we believe that the ozone monitoring network in the area meets all EPA requirements. The network is dense, it meets all of the relevant monitoring objectives, the monitors are operated in accordance with EPA requirements, and it has the appropriate number of sites designated as NAMS. The issue of whether or not the County and/or State has discontinued the operation of certain SPM sites is not as important as whether the remaining network is designed and operated in a manner that allows the determination that the data collected during the period of 1997 - 1999 are representative of ozone air quality in the Phoenix area. We have stated that we believe the network is sufficient to serve that purpose.

The Papago Park ozone monitor is still operating but has been renamed "Emergency Management." Papago Park was the name given to the site by ADEQ, which initially operated the site. The County took over operations and renamed the site. The Salt River Pima site was a seasonal site operated by ADEQ and was located on land that is part of the Salt River Pima reservation. The State discontinued operations at this site in 2000 at the request of the Salt River Pima Tribe. The tribal agency plans to operate its own ozone monitor at or near this site. During the attainment period 1997 -1999 this site recorded no exceedances of the one-hour ozone NAAQS. The highest one-hour value recorded was 0.116 ppm in 1999.

Comment: ACLPI asserts that EPA acknowledged that the ozone network in Phoenix still fails to meet all of the design requirements of 40 CFR part 58 in that the network does not meet the third monitoring objective, "determining the impact on ambient pollution levels of significant sources or source categories" which can be met by monitoring emissions from significant sources of volatile organic compounds (VOC) and nitrogen oxides (NOx).

Response: We stand by our position that in designing an ozone monitoring network--that is, a monitoring network that measures the concentration of the chemical compound, ozone (O_3)--an agency cannot meet the third monitoring objective of assessing the impact of major sources or source categories since ozone is not emitted by any type of source. Ozone is formed in an atmospheric photochemical reaction between NOx and VOC. Precursor emissions from a source are transported miles downwind before they react to form ozone. In an urban setting, emissions from large point sources mix with emissions from area and mobile sources as they are transported downwind and it is impossible to monitor for ozone formed from a single source's precursor emissions.

For areas designated as transitional, marginal, and/or moderate ozone nonattainment areas, there is no requirement to monitor for the chemical precursors of ozone air pollution. Once an area is designated or reclassified to serious or above, the State is required to institute a photochemical assessment monitoring (PAMS) program under CAA section 182(c)(1) and its implementing regulations. PAMS programs require the seasonal monitoring of VOCs and NOx at certain locations in urban nonattainment areas (e.g., just downwind of the area's central business district (type 2 site)) and in the downwind area(s) where maximum ozone

concentrations are expected to occur (type 3 site).

When we reclassified the Phoenix area as serious on November 6, 1997 (62 FR 60001, effective December 8, 1997) the design and deployment of a PAMS network became a requirement for the area. ADEQ has begun the implementation of the area's PAMS network and has deployed a type 2 site and is in the process of installing a type 3 site at this time.[8] See Serious Area SIP, Appendix D. These are appropriately located to meet the PAMS siting requirements. The requirement for operating a PAMS network remains even though we are making a finding that the Phoenix area has attained the 1-hour ozone NAAQS. Data from the PAMS network, however, is not and cannot be used in making a determination of whether or not an area has met the ozone NAAQS because the network only monitors for ozone precursors and not for ozone itself.[9]

Comment: ACLPI asserts that Maricopa County's monitoring network is inadequate because the County fails to operate all of its SLAMS sites year-round, stating that EPA regulations require states to monitor ozone at NAMS and SLAMS sites throughout the ozone season (40 CFR part 58, Appendix D) and that the ozone season in Arizona runs from January through December. *Id*. ACLPI also claims that despite these regulations, more than half of the County's SLAMS sites operate only between April 1 and October 31 and while exceedances of the 1-hour ozone standard may be rare during the winter months, they can occur, and there is no assurance that these exceedances would be captured by one of the annually operating sites due to wide spatial and temporal differences in ozone concentrations. ACLPI also asserts that the County does not require five months out of each year to perform maintenance at the seasonal sites.

Response: We disagree with ACLPI's assertion that the ozone monitoring network is inadequate because a portion of the monitoring sites operate on a seasonal basis. Our regulations at 40 CFR 58.25 allow states to make modifications to their SLAMS network with the approval of EPA. The County made this modification to its operating schedule with the full concurrence of EPA Region 9 (see letter to Ben Davis, Air Quality AIRS Program Coordinator, MCESD, from John

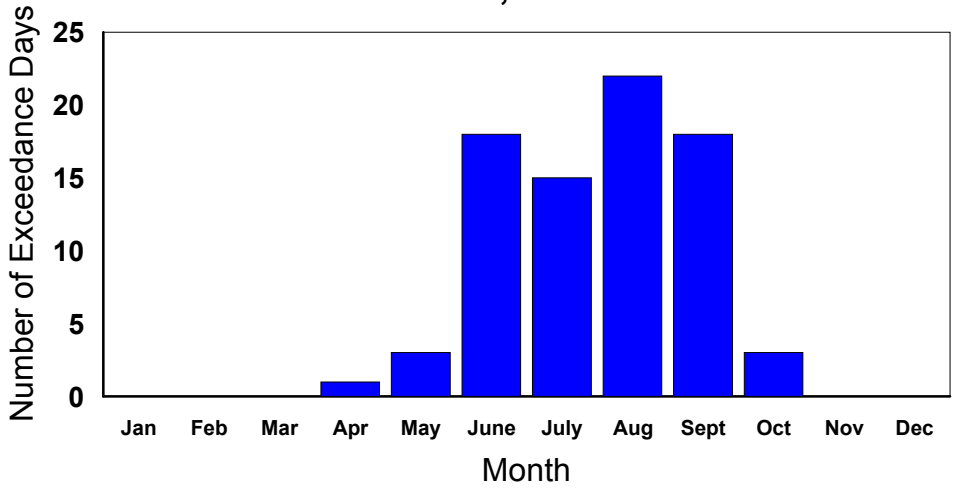
[8] The State has generally met the required schedule for implementing their PAMS network. 40 CFR 58.40 requires the State to submit an implementation plan within six months of an area's reclassification to serious (June 1998). The State missed this deadline but did submit its implementation plan in March 1999. 40 CFR 58.44 requires the area's PAMS network to be complete within five years of its reclassification. Since a total of five PAMS sites are required to be installed this means one site needs to be deployed each year with the full network in place by 2003. At this time the State is on schedule with a type 2 site installed in 1999 and the type 3 site installed in 2000. See Serious Area SIP, Appendix D.

[9] There is no ambient air quality standard for VOCs. There is a NAAQS for nitrogen dioxide (NO_2), which is a separate and distinct standard from the 1-hour ozone standard. 40 CFR 50.11. The Phoenix area meets the NO_2 standard. 40 CFR 81.303.

R. Kennedy, Chief, Technical Support Office, Air Division, U.S. EPA Region 9, November 2, 1999). Moreover, we believe that the monitoring network, even with the seasonal monitors shut down, still provides for adequate spatial coverage of the Phoenix nonattainment area during the winter months. During the five months (November through March) the County shuts down eight sites--less than half of the ozone monitoring sites-- leaving the remaining ozone network of ten sites operated by the County as well as a number of SPM sites operated by ADEQ. The sites that are operated seasonally are generally the sites recording the lowest ozone concentrations.

Regarding the possibility of exceedances of the 1-hour ozone standard during the November to March period, we have reviewed ozone data for the Phoenix area during the period 1980 through 1999. During this time there has never been a recorded ozone exceedance in the months of November, December, January, February and March. Figure 1 provides a graphic showing the total monthly distribution of ozone exceedances during the past 19 years. During this period, the area has recorded only one exceedance in the month of April and three in the month of October. The majority of ozone exceedances in the Phoenix area occur in the months of June, July, August, and September when the full network is in operation.

Figure 1
Distribution of Ozone Exceedance Days by Month
Phoenix, 1980-1999



We do agree with ACLPI's

statement that ozone air monitoring serves other purposes besides recording exceedances. We believe that portion of the network that operates year round provides adequate data for any other assessment purpose.

Comment: ACLPI claims that it is arbitrary, capricious, and contrary to EPA regulations for the Agency to find the Phoenix metropolitan area in attainment of the ozone standard without (1) requiring full adherence to the requirements of 40 CFR part 58, and (2) conducting a thorough review of Maricopa County's monitoring network to determine whether and how the County has addressed the deficiencies previously found by EPA.

Response: The ozone monitoring network operated by the County does fully adhere to the requirements in 40 CFR part 58. In numerous discussions and on-site visits with County personnel that have occurred since the time the Phoenix metropolitan area was reclassified to serious, we have found that MCESD's monitoring program meets all EPA requirements (See memorandum "Adequacy of Maricopa County Ozone Monitoring Network" from Bob Pallarino, Technical Support Office, Air Division, U.S. EPA Region 9 to John R. Kennedy, Chief, Technical Support Office, Air Division, U.S. EPA Region 9, July 31, 1997).

In addition, EPA reviews the annual network reviews submitted by the County (see discussion above on network reviews). The MCESD underwent a reorganization in 1998. Prior to this reorganization the County was not consistently meeting the requirement to submit its ambient network review on an annual basis. Since the reorganization, MCESD has submitted the required network reviews for the years 1996 through 2000. EPA worked closely with the MCESD to correct the deficiencies in its networks and, as stated numerous times in this document, we believe its networks now meet all requirements in our regulations. The annual network review process is the primary tool that EPA uses in determining the adequacy of an agency's monitoring network.

Comment: ACLPI asserts that in order to support the finding of attainment for the 1-hour ozone NAAQS, EPA should conduct a complete audit of all of the monitoring data recorded by the County and that this reasonable and prudent safeguard is needed to assure that any finding of attainment of the 1-hour ozone standard is a correct one.

Response: It is not standard practice for us to audit all of an agency's data before making a regulatory decision based on data collected by the agency. We maintain a continuous oversight of the State and local air agencies, making it unnecessary for us to undertake a massive audit of an entire program before making regulatory decisions based on its data.[10]

[10] Maricopa County has an EPA-approved QA plan in place and in past audits EPA has determined that the county follows all QA/QC procedures before reporting its ozone data to EPA's air quality database.

For the Phoenix area, we have performed audits of selected ozone monitoring sites operated by the County. During these audits, the County demonstrated that it fully adhered to all monitoring requirements in 40 CFR part 58 and produced all the required quality assurance documentation as proof (See memorandum to Debbie Jordan, Associate Director, Air Division, and Frances Wicher, Planning Office, Air Division, from John Kennedy, Chief, Technical Support Office, Air Division, and Bob Pallarino, Technical Support Office, Air Division, entitled "Site Evaluation and Quality Control/Quality Assurance Review of Selected Maricopa County Ozone Monitoring Sites," dated July 25, 1997).

Given the history of problems we have had with the County's program, we understand the concern ACLPI has with the accuracy of the County's data. However, as stated previously, the County has addressed the problems we found with its monitoring program.

Based on comparisons with other agencies under EPA Region 9's jurisdiction, the MCESD is now one of the top performers. Ambient data is submitted to EPA on a monthly basis rather than quarterly as required by our regulations. Data capture rates routinely exceed the 90 percent level (EPA regulations require a minimum 75 percent data capture rate). Monthly reports are submitted to EPA to explain any missing data. The County holds annual meetings to discuss the operation and design of its monitoring network and announces these meetings to the public and invites their comments. It has begun participation in the EPA "Smogmap" program that provides real time ozone data to the public through EPA's website (www.epa.gov/airnow). The County has opened its entire program to public scrutiny, and we are satisfied that the data collected are a correct and accurate representation of ozone air quality in the Phoenix area.

B. Determination that Certain CAA Requirements No Longer Apply

Comment: ACLPI claims that EPA has illegally exempted the Phoenix area from the 9 percent rate of progress (ROP)[11] demonstration, attainment demonstration and contingency measure requirements of the CAA based on the fact that it has not had an ozone violation in the past three years. To support this contention, ACLPI makes two arguments:

> 1) that, taken together, sections 172(c) and 182(c) require that a plan revision for a serious ozone nonattainment area include an attainment demonstration (sections 172(c)(1) and 182(c)(2)(A)), the 9 percent ROP demonstration (sections 172(c)(2) and 182(c)(2)(B)) and contingency measures (section 172(c)(9)); and;
>
> 2) that the May 10, 1995 policy memorandum on which EPA relies to exempt the Phoenix area from these requirements flatly contradicts the CAA in that the Act contains

[11] Although subsections (b)(1)(moderate areas) and (c)(2)(B)(serious areas) of section 182 contain the term "reasonable further progress," EPA often uses the terms "rate of progress" and "reasonable further progress" interchangeably.

> no exceptions from its planning requirements for areas that are potentially eligible for redesignation based on monitoring data but have not yet met the redesignation requirements of sections 107(d)(3) and 175A. ACLPI contends that under section 175A of the Act until a nonattainment area is redesignated and a maintenance plan is approved, the requirements of part D "shall continue in force and effect with respect to such area."

Finally, ACLPI acknowledges that the United States Court of Appeals for the 10th Circuit has upheld the May 10, 1995 memorandum but states that the case was incorrectly decided.

Response: We proposed to find that these Clean Air Act requirements are not applicable to the Phoenix area because it has attained the 1-hour ozone standard as demonstrated by three consecutive years without a violation.[12] We discussed in the proposal for today's action our determination that the Phoenix area attained the 1-hour ozone standard by its statutory deadline of November 15, 1999. See 65 FR 31859, 31861. This determination is documented in section II of this TSD and is based on the definition of attainment for the 1-hour ozone standard found in 40 CFR part 50. This definition provides that attainment of the 1-hour ozone standard is demonstrated when there are no violations of the 1-hour ozone standard over a three year period.[13, 14]

The statutory basis for finding that these planning requirements are not applicable is described in the proposal and in the May 10, 1995 memorandum from John S. Seitz to EPA Regional Offices entitled "Reasonable Further Progress; Attainment Demonstration, and Related Requirements for Ozone Nonattainment Areas Meeting the Ozone National Ambient Air Quality Standard" (Seitz memo). See 65 FR 31859, 31861-31863; Seitz memo at 2-5.

Contrary to ACLPI's assertion, we are not granting the Phoenix area an exemption from

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[12] The area continues in attainment of the 1-hour ozone standard with its fourth consecutive year of clean air. At the conclusion of the 2000 ozone season (which technically lasts from January through December but practically goes from April through October), the Phoenix area had recorded no exceedances and no violations of the 1-hour ozone standard.

[13] The 1-hour ozone standard is exceeded when a monitor records a reading of 0.125 ppm or above. The 1-hour ozone standard is violated when a monitor records its fourth such reading in a three-year period. 40 CFR part 50, Appendix H. This means that each individual monitor can record up to three days over the standard in a three-year period without violating the 1-ozone standard.

[14] The definition of the 1-hour ozone standard is in 40 CFR 50.9(a): "The [1-hour ozone] standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 parts per million is equal to or less than 1 [over a three year period]." 40 CFR part 50, Appendix H establishes the 3 year period.

any applicable requirements under part D. Rather, we have interpreted the requirements of sections 182(c)(2)(A) and (B)[15] and 172(c)(9) as not being applicable once an area has attained the standard, as long as it continues to do so. This is not a waiver of requirements that by their terms clearly apply; it is a determination that certain requirements are written so as to be operative only if the area is not attaining the standard. Our interpretation is consistent both with the CAA's goal of achieving and maintaining clean air, and with the concomitant policy goal of avoiding costly and unnecessary emission reductions.

As discussed further below, the plain language of CAA sections 182(c)(2)(A) and (B) and 172(c)(9) does not clearly require attainment, reasonable further progress (RFP) or contingency measure plans for areas that are designated nonattainment but that have already attained, and continue to attain, the ozone NAAQS. However, the very purpose of these plans is to bring areas that are violating the ozone NAAQS into attainment. Consistent with this purpose, we interpret these requirements as inapplicable to an area that has attained the standard, but only for so long as the area remains in attainment. The requirements will again apply if such an area violates the standard. Thus, our interpretation is strictly limited to circumstances in which no further emission reductions are required for attainment.

The language of CAA section 182(c)(2)(A) and (B) is ambiguous as to whether VOC reductions are required for serious nonattainment areas that have already attained the ozone NAAQS, but that have not yet been redesignated to attainment status. While the lead in sentence to these two requirements states that "...the State shall submit a revision to the applicable implementation plan...," subsection (c)(2)(A) calls for a demonstration that the plan will provide for attainment of the NAAQS "by the applicable attainment date." Subsection (c)(2)(B) provides that the 9 percent plan "will result in VOC emissions reductions...until the attainment date." Thus, the language of section 182(c)(2)(A) and (B) as a whole begs the question of whether any reductions are required for areas that are already in attainment and therefore need no reductions in VOC emissions to achieve the ozone NAAQS by the attainment date.

Section 182(c)(2)(B) is entitled "Reasonable Further Progress demonstration." The term "reasonable further progress" is defined as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by [EPA] for the purpose of ensuring attainment of the applicable [NAAQS] by the applicable date." CAA section 171(1). This definition applies for the purposes of part D of Title I of the CAA, which includes section 182(c). Thus, the term "reasonable further progress" requires only such reductions in emissions as are necessary to attain the NAAQS by the attainment date and no more. Accordingly, our interpretation of section 182(c)(2)(B) is consistent with the statutory definition of "reasonable further progress." Moreover, our interpretation is tightly bound to the purpose of section 182(c)(2)(B) because we interpret that section's requirements to be applicable

[15] We believe that where the CAA contains an ozone-specific requirement in section 182, it supersedes an analogous general requirement in section 172. 57 FR 13498, 13501.

to areas that lapse back into violation prior to redesignation, and which therefore need additional progress towards attainment

Furthermore, our interpretation of the requirements of section 182(c)(2)(B) is consistent with our interpretation of the general reasonable further progress requirements of CAA section 172. In our General Preamble interpreting certain provisions of part I of the CAA Amendments of 1990, we explained that the reasonable further progress requirements of CAA section 172(c)(2) do not apply when "evaluating a request for redesignation to attainment, since, at a minimum, the air quality data for the area must show that the area has already attained [the NAAQS]....[and] RFP towards attainment will, therefore, have no meaning at that point." 57 FR at 13564. This interpretation of the requirements of section 172(c) was made shortly after the CAA amendments of 1990 and we have consistently adhered to this interpretation. See 60 FR at 30190 (noting consistency of interpretation).

As with the RFP requirement, if an area has in fact monitored attainment of the standard, we believe there is no need for an area to make a further submission containing additional measures to achieve attainment. Thus the attainment demonstration requirement in section 182(c)(2)(A) would no longer apply under these circumstances. Seitz memo at 3.

We likewise determined that section 172(c)(9) does not require a contingency measure plan for nonattainment areas, such as Phoenix, which we determine to have attained the standard prior to redesignation. The contingency measure plan is required for an area that "fails to make reasonable further progress, or to attain the [NAAQS] by the attainment date. . . ." If, as in the case of Phoenix, we determine that an area has already attained the standard by its attainment date, then by definition such an area is not one to which contingency measures apply. There is simply no failure to attain by the attainment date or make progress for which additional measures need be contingent. However, as with section 182(c)(2)(A) and (B), we interpret section 172(c)(9)'s requirements to be applicable to areas that lapse back into violation prior to redesignation, and which therefore need additional progress towards attainment. Thus, our interpretation ensures that the purposes of section 172(c)(9) -- to provide for reasonable progress towards, and the attainment of, clean air -- will be served when necessary.[16]

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[16] Shortly after passage of the 1990 Amendments to the CAA, we determined that the section 172(c)(9) contingency measures were not required with respect to redesignation requests. As we explained:

> [t]he section 172(c)(9) requirements for contingency measures are directed at ensuring RFP and attainment by the applicable date. These requirements no longer apply when an area has attained the standards . . . .

57 FR at 13564. We have consistently adhered to this interpretation, which is fully consistent

We also do not agree with ACLPI's contention that EPA's position on this issue violates section 175A(c). That section provides that the requirements of part D remain in force and effect for an area until such time as it is redesignated. Section 175A(c) does not establish any additional substantive requirements; rather, it ensures that the requirements that do apply by virtue of other Act provisions continue to apply until an area is redesignated. If, however, an Act provision does not apply to an area or does not require that the particular area in question submit a SIP revision, section 175A(c) does not somehow add to the requirements with which the area must comply. In this instance, EPA is interpreting the underlying substantive requirements at issue so as not to apply to areas for so long as they continue to attain the standard. This does not violate section 175A(c); it is an interpretation of the substance of other provisions of the Act, a matter that is not affected by section 175A(c). Other requirements that do not depend on whether the area has attained the standard, such as VOC RACT requirements, continue to apply, however, and section 175A(c) ensures that they continue to apply until the area is redesignated.[17]

Finally, In *Sierra Club et al v. EPA*, 99F.3d 1551 (10th Cir. 1996), the Tenth Circuit Court of Appeals upheld the Seitz memo as it applies to moderate ozone nonattainment areas. There, pending completion of the redesignation process, and based on three years of air quality data, EPA found that two Utah Counties designated as nonattainment for ozone and classified as moderate had attained the ozone NAAQS. As a result, EPA determined that the CAA's moderate area requirements for attainment and RFP demonstrations, and contingency measures (sections 182(b)(1)(A) and 172(c)(9)) were inapplicable. Finding that this determination was a logical extension of EPA's original, general interpretation in the General Preamble, the Court accorded deference to EPA's interpretation that once a moderate ozone nonattainment area has attained the NAAQS, the moderate area CAA requirements for RFP, attainment and contingency measures no longer apply. Id. at 1556.

While the Phoenix area is a serious nonattainment area, the contingency measure provision at issue is the same, section 172(c)(9). The attainment and RFP provisions do not contain identical language, yet there is no doubt that they serve exactly the same purpose for serious areas as the provisions at issue in *Sierra Club* do for moderate areas. Thus the Court's

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with the statutory purpose of ensuring that nonattainment areas attain the NAAQS by the statutory deadline. See 60 FR at 30190 (citing EPA's Sept. 4, 1992 memorandum entitled "Procedures for Processing Requests to Redesignate Areas to Attainment" as consistent with EPA's General Preamble statement concerning section 172(c)(9)).

[17] Based on the legislative history, section 175A(c) is Congress' response to assertions by some that approved SIP controls are not enforceable once a State submits a redesignation request to attainment until and unless EPA denies the request. *A Legislative History of the Clean Air Act Amendments of 1990*, Library of Congress, November 1993, p. 8355. Thus, we believe that the focus of the section is on maintaining the integrity of the control strategy before redesignation rather than on compelling the submittal of nonsubstantive planning requirements.

reasoning in that case applies equally to the Phoenix situation.

Comment: As stated above, ACLPI claims that the Act specifically requires that until a nonattainment area is redesignated and a maintenance plan approved the requirements of part D remain in force and effect with respect to such area, citing CAA section 175A(c). ACLPI argues that "Congress determined that in the interest of protecting public health, EPA should not be permitted to waive nonattainment planning requirements until states could provide sufficient assurances that the NAAQS would be permanently maintained" and that "it is not the place of EPA to second guess this policy determination."

Response: The requirement that states provide sufficient assurances that the NAAQS will be permanently maintained is a criterion for the redesignation of an area to attainment under section 107(d)(4)(B) and not for a finding of attainment under section 181(b)(1).[18] We did not propose to redesignate the Phoenix area to attainment. Before we can do that, Arizona will need to provide, among other things, sufficient assurances in the form of an adequate maintenance plan that the NAAQS will be "permanently" maintained.[19]

Comment: ACLPI also argues that there is a sound public policy reason for the Act's approach because a state's monitored compliance with a NAAQS may reflect only a temporary improvement in air quality due to unusually favorable meteorological conditions rather than "permanent and enforceable reductions in emissions" of a pollutant or pollutant precursors.

Response: The requirement to determine that clean air is the result of "permanent and enforceable reductions in emissions" is a criterion for the redesignation of an area to attainment under section 107(d)(3)(E) and not for a finding of attainment under section 181(b)(1). We did not propose to redesignate the Phoenix area to attainment.

That aside, we believe that the finding of attainment itself addresses in part any concern about "unusually favorable meteorological conditions." We have long recognized that

[18] A redesignation to attainment under section 107(d)(3) and a finding of attainment under section 181(b)(1) have very different consequences. A redesignation to attainment changes an area's formal designation as codified in 40 CFR part 81 from nonattainment to attainment. Once an area is redesignated to attainment for the 1-hour ozone standard, it is removed from the sway of part D, subpart 2 altogether and the State may strip from its SIP any explicit subpart 2 control requirement (e.g., I/M program) that it can demonstrate is not needed for maintenance. A finding of attainment does not change an area's formal designation and it remains subject to all the explicit subpart 2 control requirements.

[19] "Permanently" is relative here. Maintenance plans are not required to demonstrate permanent attainment of the applicable air quality standard but rather to demonstrate maintenance for 10 years from the date of redesignation. See CAA section 175A(a).

meteorological conditions have a profound effect on ambient ozone concentrations. In setting the current 1-hour ozone standard in 1979, we changed the form of the standard, i.e., the criterion for determining attainment, from a deterministic form "no more than once per year" to a statistical form "when the expected number of days per year is less than or equal to one" in order to properly account for the random nature of meteorological variations:

> The maximum ozone concentrations which will occur in any given time period will vary from one period to the next, even if precursor emissions remain constant. These variations are mainly due to the random nature of meteorological factors which affect the formation and dispersion of ozone in the atmosphere. The present deterministic form of the standard, which permits only a single hourly exceedance of the standard level in any year inadequately deals with this situation. The risk to public health contributed to by ozone can be managed better if the ozone standard reflects the fact that maximum ozone concentrations are probabilistic in nature. Consequently, EPA is changing the standard to a statistical form that allows one expected exceedance per year (44 FR 8202, 8218; February 8, 1979).

The three year period for averaging the expected number of exceedances was a reasoned balance between evening out meteorological effects and properly addressing real changes in emission levels:

> A period of three successive years was chosen as the basis for determining attainment for two reasons. First, increasing the number of years increases the stability of the resulting average number of exceedances. Stated differently, as more years are used, the greater the chance of minimizing the effects of an extreme year caused by unusual weather conditions. The second factor is that by extending the number of successive years too far increases the risk of averaging data during a period in which a real shift in emissions and air quality has occurred....Three years is thought by EPA to represent a proper balance between these two considerations (43 FR 26962, 26968; June 22, 1978).

Moreover, the Phoenix area did not just barely meet the 1-hour ozone standard; it met the standard with room to spare. An area can record up to three days of air quality above the 1-hour ozone standard at any one monitor during a successive three-year period and still be considered attaining the standard. The Phoenix area fared better than that, recording not a single day over the standard at any of its 20 ozone monitors from 1997 through 1999.[20] The area's design value,

[20] In our 1997 action that reclassified the Phoenix area to serious, we noted that 1997 ozone levels throughout the West were significantly below 1996 levels and ascribed the drop to unusually favorable meteorological conditions. 62 FR 60001, 60007 (November 6, 1997) However, in 1998, most of the West again saw a large increase in the number of days over the 1-

which is a measure of the severity of an area's ozone problem and is used to establish an area's initial classification, was 10 percent below the standard, a respectable margin.[21]

Under EPA's redesignation guidance, there are two aspects to the "permanent and enforceable emission reductions." One is unusually favorable meteorology. The other is a temporary reduction in emission rates caused by shutdowns or reduced production due to temporary adverse economic conditions. See *Memorandum*, John Calcagni, Director, Air Quality Management Division (OAQPS) to Regional Air Directors, "Procedures for Processing Requests to Redesignate Areas to Attainment," September 4, 1992, page 4.

"Adverse" is not a term that, by any stretch of the imagination, could be applied to the economy of the greater Phoenix area between 1997 and 1999. During this period, the population in the greater Phoenix area grew by 300,000. The resulting annual population growth rate of 3.7 percent was well above the national rate of 1 percent. During the same three year period, more than 130,000 workers were added to the area's workforce, an annual job growth rate of 3.2 percent (compared to the national rate of 1.3 percent) that resulted in an unemployment rate that averaged well below the national rate.[22] By almost any economic measure, the greater Phoenix area has had a booming economy over the last several years.

In addition, we believe that the Phoenix area's record of clean air can be tied directly to permanent and enforceable emission reductions. The area is subject to a comprehensive ozone control strategy that includes national on-road motor vehicle standards, national non-road engine standards, national consumer product standards, Arizona's cleaner burning gasoline and vehicle emission inspection programs, and Maricopa County's industrial and commercial source rules.[23] This strategy leaves few, if any, sources of VOC unregulated.

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hour standard. The Phoenix area did not see a similar increase in the number of days over the standard. See Tables in Appendix B of this TSD.

[21] The area's design value as of the moderate area attainment date of November 15, 1996 was 0.132 ppm, 6 percent above the standard. The design value as of the serious area attainment date of November 15, 1999 was 0.113 ppm, a decrease of 16 percent from 1996 to 1999.

[22] This data is taken from the Greater Phoenix Economic Council's website, www.gpec.org/InfoCenter, which in turn used data from the U.S. Bureau of the Census, the U.S. Bureau of Labor Statistics, and the Arizona Department of Economic Security.

[23] A list of the state and local measures can be found in the Serious Area SIP, Appendix A. Information on the extensive national program to reduce emissions from on-road vehicles and non-road engines can be found on EPA's website, www.epa.gov/OMSWWW. Information on consumer product regulations can be found in the "Final Addendum to the TSD for the CAA section 182(b)(1) 15 Percent Rate of Progress Requirement for the Phoenix Metropolitan Ozone Nonattainment Area, EPA-Region 9, June 25, 1999.

Furthermore, the Phoenix area's clean air record coincided with the introduction of cleaner burning gasoline (CBG) in 1997. Either directly (through evaporation) or indirectly (through products of its combustion), gasoline contributed to 55.5 percent of Phoenix's 1996 pre-CBG anthropogenic VOC inventory. "1996 Baseyear Ozone Emission Inventory for the Maricopa County, Arizona, Nonattainment Area," MCESD, October 1999. It is, therefore, not surprising that we have seen a consistent decrease in ozone levels in the Phoenix area since the introduction of CBG.

Comment: ACLPI claims that our policy (of revoking the attainment and RFP requirements) is all the more unjustified as applied to Phoenix in light of the fact that the area will be in immediate nonattainment of the new 8-hour standard upon redesignation to attainment for the 1-hour standard and that we should insist upon the further VOC emission reductions required by the Act so that the State can meet its mandate to attain the 8-hour standard in Phoenix "as expeditiously as practicable."

Response: As we have stated previously, we are not redesignating the Phoenix area to attainment for the 1-hour ozone standard and we interpret the Act not to require further VOC emission reductions in areas that are monitoring attainment of the 1-hour ozone standard.

Our action has no effect on Arizona's obligations regarding the 8-hour ozone standard. The 8-hour ozone standard is a separate air quality standard from the 1-hour ozone standard. Even if we eventually act to redesignate the Phoenix area to attainment for the 1-hour standard, that action will only affect the area's designation status for the 1-hour standard and will have no effect on its status in regards to the 8-hour standard. The only way for the Phoenix area to be designated nonattainment for the 8-hour standard is for us to take an affirmative rulemaking action under CAA section 107 to designate it nonattainment for that standard. Thus, ACLPI's claim that the Phoenix area will be in "immediate nonattainment of the new 8-hour standard upon redesignation to attainment for the 1-hour standard" is false.

Moreover, until we do designate the area nonattainment for the 8-hour standard, Arizona has no requirement under the Act to meet the 8-hour standard in Phoenix as "expeditiously as practicable." The Act's mandate for expeditious attainment applies only to states with areas that are designated nonattainment for the applicable standard. See for example, section 172(a)(2)(A) entitled "Attainment dates for nonattainment areas": "[t]he attainment date for *an area designated nonattainment with respect to a [NAAQS]* shall be the date by which attainment can be achieved as expeditiously as practicable...." (Emphasis added).

However likely it is that the Phoenix area will be eventually be designated nonattainment for the 8-hour standard, we must first take the rulemaking action under section 107 to formally designate the area nonattainment before Arizona can be required to undertake any nonattainment area planning for the 8-hour standard. Thus, we cannot find that a State is failing to meet requirements for the1-hour standard on the basis that by doing more it could meet the 8-hour standard more expeditiously.

Comment: ACLPI claims that EPA implicitly recognizes the possibility that the Phoenix area may violate the ozone NAAQS again but then dismisses it with the observation that EPA can require a SIP revision containing the missing elements if this occurs but that this approach will not help "those who needlessly suffer from unhealthy ozone levels that could have been avoided through compliance with the Act," noting that SIP revisions take months, sometimes years to complete. Finally, ACLPI asserts that the "more responsible policy is the one adopted by Congress which requires states to adhere to the Act's nonattainment planning requirements until they can demonstrate that redesignation of an area to attainment is warranted."

Response: The Seitz memo explicitly calls out the consequences of future violations of the 1-hour ozone standard. In the proposal for today's action, we merely described this policy as it would apply to the Phoenix area if the area were to violate the standard in the future. While this could be interpreted as acknowledging the possibility of future violations in the Phoenix area, it is not an acknowledgment of the probability of future violations.

The Phoenix area is not being left bereft of ozone controls by this finding of attainment and the concurrent finding that certain CAA planning requirements no longer apply. The State of Arizona and MCESD have adopted a comprehensive ozone control program for the Phoenix area. See Serious Area Ozone SIP, Appendix A. All these existing ozone control measures remain in place and these agencies remain obligated to fully implement and enforce them. Most are SIP approved or have been submitted for SIP approval. Id.

In addition, the area will be the beneficiary of substantial new controls over the next few years. The two largest source categories of VOC emissions in the Phoenix area, in order, are gasoline-powered on-road vehicles and gasoline-powered non-road engines. Several already adopted state and federal measures will be implemented over the next few years that will further reduce emissions from these categories. These measures include Arizona's implementation of the final, more stringent cut points for the VEI program and expansion of that program and the State's CBG program into growing areas that surround the core Phoenix urbanized area. Id.

Nationally, we have issued our tier 2 on-road motor vehicle standards covering both light duty cars and light duty trucks including sports utility vehicles. 65 FR 6697 (February 10, 2000). For non-road engines, we have established emission limitations for new non-road engines of all types. Many of these standards have tiered emission standards that become increasingly stringent in future years. See, for example, the tier II standards for small gasoline-powered nonroad engines at 65 FR 24267 (April 25, 2000).

The Phoenix area will also benefit from national standards for consumer products required by CAA section 183(e). These standards control the VOC content of such consumer products as paints, hair sprays, household pesticides, and miscellaneous other consumer goods. 63 FR 48819 (September 11, 1998). We also continue to issue maximum available control technology (MACT) standards under CAA section 112(d) to reduce hazardous air pollutants from stationary sources, most of which target VOC emissions. See 40 CFR part 61.

Finally, we note that under ACLPI's construction of the CAA, the Phoenix area would face the prospect of mandatory sanctions under CAA section 179(a) for failing to submit the 9 percent reasonable further progress, attainment demonstration, and contingency measures plans.

Under ACLPI's interpretation of CAA section 182(c)(2)(B), Arizona would have to adopt controls for the Phoenix area that would reduce VOC emissions by 9 percent despite the fact that the area has attained and continues to attain the 1-hour ozone NAAQS. These measures would impose additional costs upon the area's residents although they are unnecessary for clean air. Moreover, under ACLPI's interpretation, the Phoenix area could be subjected to mandatory sanctions under CAA section 179(a) for failing to adopt these unnecessary controls. Thus, ACLPI's interpretation would not only require measures that are not necessary for attaining the standard, it could also lead to sanctions for failing to submit these measures. In contrast, EPA's interpretation would not require unnecessary emissions reductions, nor sanctions for a state's failure to undertake such reductions.

As we have noted before, the Phoenix area is growing fast. If ACLPI's concern regarding possible future violations of the 1-hour ozone standard is in part due to this growth, we note that the serious area attainment and ROP requirements would not have addressed that issue because both needed to address growth only through November 15, 1999. Any upward trend in emissions that may cause future violations would thus be beyond the scope of these requirements and become the province of the maintenance plan to address. In this way, the best next step for the Phoenix area is maintenance planning because of the longer time frames intrinsic to maintenance versus attainment planning.[24]

[24] If the Phoenix area had been bumped to severe, its attainment deadline would have been November 15, 2005. A maintenance plan will stretch the demonstration period to at least 2010, if not beyond.

Appendix A

AIRS Report for the Phoenix Metropolitan Ozone Nonattainment Area 1997-1999

AMP450 AIR QUALITY SUBSYSTEM
QUICK LOOK REPORT

0 OZONE (44201) ARIZONA UNITS: 007 PPM
0 OZONE SEASON: JAN 01 TO DEC 31

SITE ID	P O M C T	CITY	COUNTY	ADDRESS	REP YR ORG METH	* NUM MEAS	NUM REQ	VALID DAILY 1-HR MAXIMUM 1ST	2ND	3RD	4TH	VALS>.125 MEAS	* MISS DAYS EST * ASSUMED < STANDARD
004-013-0013	1 2	PHOENIX	MARICOPA	4732 S CENTRAL A	97 200 056	343	365	.102	.097	.096	.094	0	0.0 4
04-013-0013	1 2	PHOENIX	MARICOPA	4732 S CENTRAL A	98 200 056	349	365	.107	.101	.100	.098	0	0.0 2
04-013-0013	1 2	PHOENIX	MARICOPA	4732 S CENTRAL A	99 200 056	179	365	.086	.086	.083	.081	0	0.0 2
04-013-0019	1 2	PHOENIX	MARICOPA	3847 W EARLL DR-	97 200 056	325	365	.101	.098	.097	.096	0	0.0 2
04-013-0019	1 2	PHOENIX	MARICOPA	3847 W EARLL DR-	98 200 056	364	365	.118	.113	.112	.105	0	0.0 1
04-013-0019	1 2	PHOENIX	MARICOPA	3847 W EARLL DR-	99 200 056	356	365	.115	.110	.109	.108	0	0.0 7
04-013-1003	1 2	MESA	MARICOPA	BROADWAY & BROOK	97 200 056	349	365	.107	.104	.104	.101	0	0.0 1
04-013-1003	1 2	MESA	MARICOPA	BROADWAY & BROOK	98 200 056	364	365	.102	.101	.098	.096	0	0.0 1
04-013-1003	1 2	MESA	MARICOPA	BROADWAY & BROOK	99 200 056	355	365	.125	.112	.110	.109	1	1.0 6
04-013-1004	1 2	PHOENIX	MARICOPA	601 E BUTLER DR	97 200 056	352	365	.115	.112	.112	.108	0	0.0 5
04-013-1004	1 2	PHOENIX	MARICOPA	601 E BUTLER DR	98 200 056	357	365	.120	.113	.112	.109	0	0.0 3
04-013-1004	1 2	PHOENIX	MARICOPA	601 E BUTLER DR	99 200 056	353	365	.124	.108	.103	.101	0	0.0 6
04-013-1010	1 2	MESA	MARICOPA	4530 E MCKELLIPS	97 200 056	355	365	.100	.098	.098	.098	0	0.0 3
04-013-1010	1 2	MESA	MARICOPA	4530 E MCKELLIPS	98 200 056	358	365	.112	.104	.101	.100	0	0.0 3
04-013-1010	1 2	MESA	MARICOPA	4530 E MCKELLIPS	99 200 056	297	365	.105	.099	.099	.099	0	0.0 4
04-013-2001	1 2	GLENDALE	MARICOPA	6000 W OLIVE AVE	97 200 056	264	365	.099	.093	.093	.093	0	0.0 1
04-013-2001	1 2	GLENDALE	MARICOPA	6000 W OLIVE AVE	98 200 056	360	365	.093	.093	.085	.085	0	0.0 3
04-013-2001	1 2	GLENDALE	MARICOPA	6000 W OLIVE AVE	99 200 056	284	365	.109	.102	.098	.098	0	0.0 7
04-013-2005	1 2	SCOTTSDALE	MARICOPA	25000 N WINDY WA	97 200 056	353	365	.112	.109	.098	.097	0	0.0 1
04-013-2005	1 2	SCOTTSDALE	MARICOPA	25000 N WINDY WA	98 200 056	361	365	.114	.112	.108	.106	0	0.0 1
04-013-2005	1 2	SCOTTSDALE	MARICOPA	25000 N WINDY WA	99 200 056	361	365	.120	.119	.102	.096	0	0.0 3
04-013-3002	1 1	PHOENIX	MARICOPA	1845 E ROOSEVELT	97 200 056	358	365	.107	.101	.098	.098	0	0.0 1
04-013-3002	1 1	PHOENIX	MARICOPA	1845 E ROOSEVELT	98 200 056	349	365	.101	.101	.100	.100	0	0.0 2
04-013-3002	1 1	PHOENIX	MARICOPA	1845 E ROOSEVELT	99 200 056	349	365	.110	.104	.103	.098	0	0.0 7
04-013-3003	1 1	SCOTTSDALE	MARICOPA	2857 N MILLER RD	97 200 056	343	365	.101	.098	.098	.093	0	0.0 2
04-013-3003	1 1	SCOTTSDALE	MARICOPA	2857 N MILLER RD	98 200 056	347	365	.106	.099	.094	.094	0	0.0 3
04-013-3003	1 1	SCOTTSDALE	MARICOPA	2857 N MILLER RD	99 200 056	348	365	.090	.087	.087	.084	0	0.0 10
04-013-3004	1 2	PHOENIX	MARICOPA	2035 N 52ND ST-E	97 200 056	351	365	.109	.108	.105	.104	0	0.0 2
04-013-3004	1 2	PHOENIX	MARICOPA	2035 N 52ND ST-E	98 200 056	352	365	.100	.099	.095	.094	0	0.0 3
04-013-3004	1 2	PHOENIX	MARICOPA	2035 N 52ND ST-E	99 200 056	301	365	.118	.110	.110	.108	0	0.0 2
04-013-3006	1 2	PHOENIX	MARICOPA	6180 W ENCANTO B	97 200 056	289	365	.098	.095	.095	.091	0	0.0 2
04-013-3006	1 2	PHOENIX	MARICOPA	6180 W ENCANTO B	98 200 056	352	365	.114	.113	.099	.098	0	0.0 0
04-013-3006	1 2	PHOENIX	MARICOPA	6180 W ENCANTO B	99 200 056	300	365	.112	.101	.098	.096	0	0.0 0
04-013-3009	1 2	CHANDLER	MARICOPA	163 S PRICE RD-W	97 200 056	347	365	.103	.096	.094	.091	0	0.0 1
04-013-3009	1 2	CHANDLER	MARICOPA	163 S PRICE RD-W	98 200 056	353	365	.094	.094	.089	.085	0	0.0 4
04-013-3009	1 2	CHANDLER	MARICOPA	163 S PRICE RD-W	99 200 056	301	365	.097	.088	.084	.081	0	0.0 1
04-013-4003	1 2	PHOENIX	MARICOPA	33 W TAMARISK AV	99 200 056	91	365	.089	.083	.081	.078	0	0.0 1
04-013-9508	1 2	HUMBOLDT MOUN	MARICOPA	7 SPRINGS RD-FAA	97 200 056	158	365	.099	.098	.092	.091	0	0.0 3
04-013-9508	1 2	HUMBOLDT MOUN	MARICOPA	7 SPRINGS RD-FAA	98 200 056	351	365	.116	.103	.101	.100	0	0.0 3
04-013-9508	1 2	HUMBOLDT MOUN	MARICOPA	7 SPRINGS RD-FAA	99 200 056	295	365	.098	.096	.094	.094	0	0.0 3
04-013-9604	1 3	PEORIA	MARICOPA	6801 W DEER VALL	97 200 056	188	365	.075	.073	.071	.070	0	0.0 1
04-013-9701	1 2	MOUNT ORD	MARICOPA	MT ORD-TONTO NF	97 200 056	237	365	.108	.106	.106	.104	0	0.0 3

0 OZONE (44201) ARIZONA UNITS: 007 PPM
0 OZONE SEASON: JAN 01 TO DEC 31

SITE ID	P O C	M T	CITY	COUNTY	ADDRESS	REP YR	ORG METH	*NUM MEAS	NUM REQ	VALID DAILY 1-HR MAXIMUM *MAXIMA 1ST	2ND	3RD	4TH	MISS DAYS VALS>.125 MEAS	EST	ASSUMED < STANDARD
004-013-9701	1	2	MOUNT ORD	MARICOPA	MT ORD-TONTO NF	98	200 056	340	365	.104	.101	.099	.099	0	0.0	4
04-013-9701	1	2	MOUNT ORD	MARICOPA	MT ORD-TONTO NF	99	200 056	268	365	.103	.098	.098	.097	0	0.0	2
04-013-9702	1	2	BLUE POINT	MARICOPA	USERY PASS RD/BU	97	200 056	328	365	.102	.099	.097	.097	0	0.0	4
04-013-9702	1	2	BLUE POINT	MARICOPA	USERY PASS RD/BU	98	200 056	355	365	.115	.112	.106	.105	0	0.0	2
04-013-9702	1	2	BLUE POINT	MARICOPA	USERY PASS RD/BU	99	200 056	359	365	.108	.107	.105	.104	0	0.0	6
04-013-9704	1	2	FOUNTAIN HILL	MARICOPA	16426 E PALISADE	97	200 056	363	365	.114	.113	.112	.103	0	0.0	2
04-013-9704	1	2	FOUNTAIN HILL	MARICOPA	16426 E PALISADE	98	200 056	360	365	.123	.110	.105	.105	0	0.0	1
04-013-9704	1	2	FOUNTAIN HILL	MARICOPA	16426 E PALISADE	99	200 056	361	365	.114	.113	.105	.103	0	0.0	4
04-013-9706	1	3	RIO VERDE	MARICOPA	FOREST RD & DEL	97	200 056	144	365	.113	.105	.103	.102	0	0.0	1
04-013-9706	1	3	RIO VERDE	MARICOPA	FOREST RD & DEL	98	200 056	17	365	.104	.100	.095	.089	0	0.0	0
04-013-9706	1	3	RIO VERDE	MARICOPA	FOREST RD & DEL	99	200 056	183	365	.112	.102	.101	.100	0	0.0	1
04-013-9707	1	3	ROOSEVELT	MARICOPA	HWY 188,ROOSEVEL	97	200 056	138	365	.113	.104	.104	.102	0	0.0	0
04-013-9805	1	3	LAKE PLEASANT	MARICOPA	41402 N 87TH AVE	98	200 056	195	365	.104	.098	.093	.092	0	0.0	8
04-013-9805	1	3	LAKE PLEASANT	MARICOPA	41402 N 87TH AVE	99	200 056	294	365	.096	.094	.093	.093	0	0.0	9
04-013-9993	1	3	PALO VERDE	MARICOPA	36248 W. ELLIOTT	97	100 019	243	365	.099	.082	.082	.082	0	0.0	7
04-013-9993	1	3	PALO VERDE	MARICOPA	36248 W. ELLIOTT	98	100 019	188	365	.099	.092	.091	.090	0	0.0	6
04-013-9993	1	3	PALO VERDE	MARICOPA	36248 W. ELLIOTT	99	100 019	206	365	.090	.087	.085	.084	0	0.0	4
04-013-9994	1	3	SCOTTSDALE	MARICOPA	10005 E OSBORN R	97	100 019	247	365	.107	.102	.102	.102	0	0.0	4
04-013-9994	1	3	SCOTTSDALE	MARICOPA	10005 E OSBORN R	98	100 019	172	365	.115	.108	.107	.105	0	0.0	4
04-013-9994	1	3	SCOTTSDALE	MARICOPA	10005 E OSBORN R	99	100 019	207	365	.116	.106	.104	.097	0	0.0	2
04-013-9997	1	3	PHOENIX	MARICOPA	4530 N 17TH AVEN	97	100 019	245	365	.099	.098	.096	.095	0	0.0	2
04-013-9997	1	3	PHOENIX	MARICOPA	4530 N 17TH AVEN	98	100 019	230	365	.102	.099	.095	.095	0	0.0	3
04-013-9997	1	3	PHOENIX	MARICOPA	4530 N 17TH AVEN	99	100 019	356	365	.073	.073	.072	.072	0	0.0	1

0 OZONE (44201)

-METHODS:	CODE	COLLECTION METHOD	ANALYSIS METHOD
0	019	INSTRUMENTAL	ULTRA VIOLET
	056	INSTRUMENTAL	ULTRA VIOLET

Appendix B

Comparison of Phoenix Area Air Quality to Other Areas in the West 1997-1999

Air Basin	Number of Days Over the 1-Hour Standard				Year to Year Change (Percent)		
	1996	1997	1998	1999	%96-97	%97-98	%98-99
Phoenix	7	0	0	0	-100	0	0
San Diego	2	1	9	0	-50	800	-100
South Coast	85	64	60	39	-25	-6	-35
South Central Coast	19	3	6	2	-84	100	-67
San Francisco Bay Area	8	0	8	3	-100	---	-63
Sacramento Valley	9	3	14	7	-67	367	-50
San Joaquin Valley	56	16	39	28	-71	144	28
Mojave Desert	39	22	26	24	-43	18	-5
Salton Sea	21	13	11	10	-38	-15	-9
Average Year to Year Change for California Air Basins					-60	+201	-38

Air Basin	Peak 1-Hour Ozone Reading				Year to Year Change (Percent)		
	1996	1997	1998	1999	%96-97	%97-98	%98-99
Phoenix	0.14	0.12	0.12	0.12	-28	0	0
San Diego	0.14	0.14	0.16	0.12	0	14	-25
South Coast	0.24	0.21	0.24	0.17	-13	13	-29
South Central Coast	0.16	0.14	0.17	0.14	-13	21	-21
San Francisco Bay Area	0.14	0.11	0.15	0.16	-21	36	7
Sacramento Valley	0.16	0.14	0.16	0.16	-13	13	0
San Joaquin Valley	0.17	0.15	0.17	0.16	-12	12	-6
Mojave Desert	0.18	0.19	0.20	0.14	6	5	-30
Salton Sea	0.18	0.16	0.17	0.17	-11	6	0
Average Year to Year Change for California Air Basins					-10	+15	-13

Contribution of gasoline to 1996 anthropogenic inventory

bulk terminals and bulk plants -- 0.5 tpd
storage transportation and marketing of petroleum products -- 19.2 tpd
nonroad engines -- 54.5 tpd
on-road motor vehicles -- 88.8 tpd
total from gasoline -- 163 tpd

total anthropogenic VOC inventory -- 293.9 tpd

All figures taken from "1996 Baseyear Ozone Emission Inventory for the Maricopa County, Arizona, Nonattainment Area," MCESD, October 1999, Chapter 1.

Appendix C

AIRS Report for the Phoenix Metropolitan Ozone Nonattainment Area 2000