ATTACHMENT A

RELEVANT SECTIONS OF THE

HEALTH AND SAFETY CODE

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RELEVANT SECTIONS OF THE HEALTH AND SAFETY CODE

Section 39607(e):

[The state board shall:]

Establish and periodically review criteria for designating an air basin attainment or nonattainment for any state ambient air quality standard set forth in Section 70200 of Title 17 of the California Code of Regulations. In developing and reviewing these criteria, the state board shall consider instances where there is poor or limited ambient air quality data, and shall consider highly irregular or infrequent violations. The state board shall provide an opportunity for public comment on the proposed criteria, and shall adopt the criteria after a public hearing.

Section 39608:

(a) The state board, in consultation with the districts, shall identify, pursuant to subdivision (e) of Section 39607, and classify each air basin which is in attainment and each air basin which is in nonattainment for any state ambient air quality standard. This identification and classification shall be made on a pollutant-by-pollutant basis. Where the state board finds that data is not sufficient to determine the attainment or nonattainment status for an air basin, the state board shall identify the air basin as unclassified.

(b) The state board may assign an attainment, nonattainment, or unclassified designation to one or more areas within any air basin unless the state board finds and determines that the pollutant for which the designation applies affects the entire region or is produced by emission sources throughout the region.

(c) Designations made by the state board shall be reviewed annually and updated as new information becomes available.

Section 40718:

(a) Not later than January 1, 1990, the state board shall publish maps identifying those cities, counties, or portions thereof which have measured one or more violations of any state or federal ambient air quality standard. The state board shall produce at least one separate map for each pollutant.

(b) A district may prepare the maps required under subdivision (a) for the area within its jurisdiction. If a district chooses to prepare maps, the district shall provide the maps to the state board for review not less than four months prior to the date when the state board is required to publish the maps, and pursuant to a schedule established by the state board for any subsequent maps.

(c) The maps produced pursuant to subdivision (a) shall be based upon the most recent monitoring results, using the best technological capabilities and the best scientific judgment. The maps produced pursuant to subdivision (a) shall clearly identify portions of each district which have or have not measured one or more violations of any state or federal ambient air quality standard. The maps shall be representative of the actual air quality in each portion of the district.

(d) The state board shall publish its criteria for preparing the maps pursuant to this section not later than January 31, 1989. To the extent applicable, the state board shall identify any criteria relating to meteorological impact on monitored air quality data; reliability of monitored data; magnitude, frequency, and duration of periods when ambient air quality standards are exceeded; and the area within the district in which the standards are exceeded.

(e) Any person may petition the state board to hold a public hearing on any proposed, adopted, amended, or revised map. If the petition is granted by the state board, the public hearing may be held at a regularly scheduled public hearing in Sacramento. Notice of the time and place of any hearing shall be given not less than 30 days prior to the hearing by publication in the district pursuant to Section 6061 of the Government Code. If a district includes portions of more than one county, the notice shall be published in each county not less than 30 days prior to the date of the hearing.

The notice shall include a description of the map proposed to be adopted, amended, or repealed and a summary description of the effect of the proposal.

(f) The state board shall review annually, and as appropriate revise, the maps required by this section, using the criteria developed pursuant to subdivision (c).

(g) Nothing in this section is intended to prevent a district board from enacting and enforcing rules or regulations designed to prevent interference with or maintenance of

state and federal air quality standards, or to prevent significant deterioration of air quality in any area of the district.

Section 40925.5(a):

A district which is nonattainment for the state ozone standard shall be designated "nonattainment-transitional" by operation of law if, during a single calendar year, the state standard is not exceeded more than three times at any monitoring location within the air basin.

ATTACHMENT B

TEXT OF THE

CURRENT DESIGNATION CRITERIA

ATTACHMENT B

TEXT OF THE CURRENT DESIGNATION CRITERIA

CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 70300 THROUGH 70306, AND APPENDICES 1 THROUGH 4, THEREOF

70300. General Statement of Purpose

The objective of these criteria is to guide the state board in making designations of air basins as attainment, nonattainment, or unclassified for each of the pollutants for which state ambient air quality standards have been established in Section 70200.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 39608, Health and Safety Code.

70301. Air Quality Data Used for Designations

(a) Except as otherwise provided in this article, designations shall be based on data for record. "Data for record" are those data collected by or under the auspices of the state board or the districts for the purpose of measuring ambient air quality, and which the executive officer has determined comply with the siting and quality assurance procedures established in Part 58, Title 40, Code of Federal Regulations, as they existed on July 1, 1987, or other equivalent procedures. The executive officer shall also determine within 90 days of submittal of complete supporting documentation whether any other data which are provided by a district or by any other person comply with the siting and quality assurance procedures and shall be data for record. If the executive officer finds there is good cause that 90 days is insufficient time to make a determination, he/she may after notification of the person requesting the data review extend the deadline for completion of the data review.

(b) Except as otherwise provided in this article, designations and reviews of designations shall be based on data for record for the three calendar years prior to the year in which the designation is made or the annual review of the designation is conducted.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 39608, Health and Safety Code.

70302. Geographic Extent of Designations

(a) An air basin shall be the area designated for ozone, nitrogen dioxide, suspended particulate matter (PM10), sulfates, and visibility reducing particles. Provided, however, if the state board finds (based on air quality data, meteorology, topography, or the distribution of population and emissions) that there are areas within an air basin with distinctly different air quality deriving from sources and conditions not affecting the entire air basin, the state board may designate an area smaller than an air basin using political boundary lines to the extent practicable. In designating an area smaller than an air basin as nonattainment, the state board shall include within the area those sources whose emissions contribute to a violation of a standard for that pollutant. Contiguous areas which would have the same designation within an air basin shall be one designated area.

(b) A county or the portion of a county which is located within an air basin shall be the area designated for carbon monoxide, sulfur dioxide, lead (particulate), and hydrogen sulfide. Provided, however, if the state board finds (based on air quality data, meteorology, topography, or the distribution of population and emissions) that there are areas within the county with distinctly different air quality, it may designate a smaller area. In designating an area smaller than a county as nonattainment, the state board shall include within the area those sources whose emissions contribute to a violation of a standard for that pollutant.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 38608, Health and Safety Code.

70303. Criteria for Designating an Area as Nonattainment

(a) The state board shall designate an area as nonattainment for a pollutant if:

(1) Data for record meet the representativeness criteria set forth in "Criteria for Determining Data Representativeness" contained in Appendix 1 to this article and show at least one violation of a state standard for that pollutant in the area; or

(2) Limited or no air quality data were collected in the area, but the state board finds, based on meteorology, topography, and air quality data for an adjacent nonattainment area, that there has been at least one violation of a state standard for that pollutant in the area being designated.

(b) An area shall not be designated as nonattainment if the only recorded exceedance(s) of that standard were based solely on data for record determined to be affected by a highly irregular or infrequent event. Data affected by a highly irregular or infrequent event will be identified as such by the executive officer in accordance with the "Air Resources Board Procedure for Reviewing Air Quality Data Possibly Affected by a Highly Irregular or Infrequent Event," set forth in Appendix 2 to this article.

(c) The state board shall, if requested by the district no later than July l5, 1990 or no later than May 1 of each year thereafter pursuant to section 70306, identify that portion of a designated area within the district as nonattainment-transitional for a pollutant other than ozone with a standard averaging time less than or equal to 24 hours and samples are routinely collected every day if it finds that:

(1) Data for record for the previous calendar year are consistent with the criteria established in section 70304(a)(2) and show two or fewer days at all sites in the area with violations of a state standard for that pollutant (not including violations found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2);

(2) Evaluation of multi-year air quality, meteorological, and emission data indicates that ambient air quality either has stabilized or is improving and the area is expected to reach attainment within three years; and

(3) The geographic extent of the area is consistent with the criteria established in section 70302.

(d) An area designated as nonattainment-transitional for a pollutant is close to attaining the standard(s) for that pollutant. The nonattainment- transitional designation provides an opportunity for a district to review and potentially to modify its attainment plan. Any modification to an attainment plan must be consistent with state and federal regulations and statutes.

NOTE: Authority Cited: Sections 39600, 39601, 39607, 39608, and 40925.5, Health and Safety Code. Reference: Sections 39607, 39608, and 40925.5, Health and Safety Code.

70303.5. Requirements for Ozone Nonattainment-Transitional

In evaluating whether a district meets the requirements of HSC 40925.5, the Board shall use the following guidelines:

(1) Data for record for the previous calendar year must be consistent with the criteria established in section 70304(a)(2) to ensure that no more than three exceedances have occurred;

(2) All data collected during the previous calendar year will be considered in the evaluation, including data possibly affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2;

(3) Each day with concentration(s) that exceed the state ozone standard will be counted as one exceedance day; and

(4) No monitoring location may have more than three exceedance days during the previous calendar year.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 40925.5, Health and Safety Code. Reference: Sections 39607 and 40925.5, Health and Safety Code.

70304. Criteria for Designating an Area as Attainment

(a) The state board shall designate an area as attainment for a pollutant if:

(1) Data for record show that no state standard for that pollutant was violated at any site in the area; and

(2) Data for record meet representativeness and completeness criteria for a location at which the pollutant concentrations are expected to be high based on the spatial distribution of emission sources in the area and the relationship of emissions to air quality. Data representativeness criteria are set forth in "Criteria for Determining Data Representativeness" contained in Appendix 1 to this article. Data completeness criteria are set forth in "Criteria for Determining Data Completeness" contained in Appendix 3 to this article.

(b) Where there are limited or no air quality data for an area, the state board shall designate the area as attainment for a pollutant if it finds that no state standard for that pollutant has been violated in that area based on:

(1) Air quality data collected in the area during the most recent period since 1980 which meet the conditions in (a) above;

(2) Emissions of that pollutant or its precursors in the area have not increased since that period to a level at which the standard might be exceeded; and

(3) Air quality data collected in the area since the time period in (1) above do not show a violation of the state standard.

(c) Where an area has limited or no air quality data for nitrogen dioxide, sulfur dioxide, sulfates, and lead (particulate), the state board shall designate that area attainment for a pollutant

if it finds that no state standard for that pollutant has been violated in that area based on the state board's "Screening Procedure for Determining Attainment Designations for Areas with Incomplete Air Quality Data" set forth in Appendix 4 to this article.

(d) A nonattainment area shall not be redesignated as attainment for a pollutant if:

(1) Data for record for the monitoring site showing the greatest violation of a state standard for that pollutant no longer are available; and

(2) No other site has been identified as equivalent by the executive officer.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 39608, Health and Safety Code.

70305. Criteria for Designating an Area as Unclassified

The state board shall designate an area as unclassified for a pollutant if it finds that, except as otherwise provided in this article, the data do not support a designation of attainment or nonattainment.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 39608, Health and Safety Code.

70306. Annual Review of Designations

(a) The executive officer shall conduct annual reviews of all designations and shall propose revisions to the designations as necessary to the state board. The executive officer shall complete the annual reviews by November 15.

(b) Any request for a change in a designation and any submittal of information for purposes of the executive officer's consideration in the annual review of a designation shall be provided in writing to the executive officer no later than May 1 of each year commencing with May 1, 1990.

NOTE: Authority Cited: Sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: Sections 39607 and 39608, Health and Safety Code.

APPENDIX 1

CRITERIA FOR DETERMINING DATA REPRESENTATIVENESS

This Appendix describes the criteria to be used in determining data representativeness for the purpose of designating areas as described in Article 3, Subchapter 1.5, Chapter 1, Part III, Title 17 (commencing with Section 70300), California Code of Regulations. Representativeness, as used here, is only related to whether or not the amount of data reported is deemed sufficiently complete to characterize reliably air quality during the respective time period. No other kind of representativeness is implied. The criteria for representativeness are summarized in the accompanying table and discussed further, below.

Air quality statistics are usually computed from short term observed values. For example, an annual arithmetic mean is computed from all available hourly samples. If all the short term values for the statistical time period are available, the calculated statistic is representative. However, because all the short term values for a given period often are not available, a minimum number of observations are needed to provide reasonable assurance that the calculated value is a reliable estimate. In general, statistics are considered representative if 75 percent of the possible short term values are included and are distributed throughout the entire statistical time period.

To ensure that seasonal variations are accounted for, representative annual statistics are required to have four representative calendar quarters of data. For example, if an annual mean is based on 24-hour samples, such as that computed for suspended particulate matter (PM10) samples, three representative months are required for each calendar quarter. A 24-hour particulate sample is collected once every six days or a total of five samples per 3l-day month. Therefore, three or fewer samples (less than or equal to 60 percent data recovery) do not meet the criterion for a reliable estimate of the monthly mean concentration. The lack of representativeness of the monthly mean concentrations precludes a reliable estimate of a representative calendar quarter, which in turn precludes the representativeness of an annual statistic. Each level of criteria--hour, day, month, quarter, and year--must be met in order to make a representative annual statistic.

For observations made at less than 24-hour intervals, for example, hourly samples, representativeness depends on whether all the individual values are to be used or only a single daily value is to be used. In general, for representative statistics computed from all of the individual values, such as the mean of all hours, 75 percent of the values in the respective period are required. For representative statistics computed from daily values, such as the monthly mean of daily maximum hours, data from 75 percent of the days in the month are required and the data within those days must meet the relevant representativeness criteria.

CRITERIA FOR REPRESENTATIVENESS OF AIR QUALITY MEASUREMENTS AND STATISTICS

Representative Calendar Statistic	Sampling Time Period	Basis of Statistic or Requiremen	Number of Representative Periods Required
Year	Any		4 representative calendar quarters
Quarter	24-hour	Based on a daily sample	3 representative months
	<24-hours	Based on a daily statistic; or	69 or more representative calendar days
		Based on hourly samples	1,643 or more hours
Month	24-hour	Based on daily sample	4 or more 24-hour samples
	<24-hours	Based on a daily statistic; or	23 or more representative calendar days
		Based on all hourly samples; or	548 or more hours
		Based on all 2-hour samples; or	274 or more 2-hour samples
		Based on all 3-hour samples	183 or more 3-hour samples
	1-hour		6 or more hours in each 1/3 day (hours 0 thru 7, 8 thru 15, 16 thru 23), and missing no more than 2 consecutive hourly samples
Day	2-hour	Based on all 2-hour samples	9 or more samples
	3-hour	Based on all 3-hour samples	6 or more samples
	24-hour	Based on daily sample	22 but not more than 26 hours of sampling

Mean of N Hour Period	N	Number of Samples Needed
	24	18 or more hourly samples
	8	6 or more hourly samples
	5	or more hourly samples
	4	3 hourly samples
	3	3 hourly samples
	2	2 hourly samples
	1	30 minutes or more of sampling

APPENDIX 2

AIR RESOURCES BOARD PROCEDURE FOR REVIEWING AIR QUALITY DATA POSSIBLY AFFECTED BY A HIGHLY IRREGULAR OR INFREQUENT EVENT

This Appendix describes the procedures that the Air Resources Board will use for reviewing air quality data possibly affected by a highly irregular or infrequent event with regard to the state ambient air quality standards. All decisions regarding the identification of data as being affected by a highly irregular or infrequent event will be made by the executive officer.

The executive officer will review air quality data for possible identification as affected by a highly irregular or infrequent event if the data are the only exceedances of an air quality standard in the area or if such identification would otherwise affect the designation of the area.

Three types of highly irregular or infrequent events may be identified:

1. Exceptional Event.
2. Extreme Concentration Event.
3. Unusual Concentration Event.

Exceptional Events

An exceptional event is an event beyond reasonable regulatory control which causes an exceedance of a state standard. An exceptional event must be linked to a specific cause such as an act of nature or unusual human activity. As guidance to the states for determining exceptional events, the federal Environmental Protection Agency (EPA) has published Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, (EPA-450/4-86-007), July 1986 (the EPA Guideline). The EPA Guideline provides overall criteria for determining whether an event is exceptional with regard to the national standards. The executive officer will use the EPA Guideline as a general basis for reviewing ambient data, but will not be bound by the specific definitions in the EPA Guideline for the various types of exceptional events because those definitions are made on a national basis. In addition, since what may be exceptional in one part of the state may be common in another, each possible event will be evaluated on a case-by-case basis.

The steps for identifying an exceptional event are:

1. A district (or the executive officer) identifies questionable data.

2. If a known exceptional event has occurred, the district gathers relevant data to document the occurrence.

3. If an exceptional event is only suspected, the district investigates available data for the possible event.

4. The district submits to the executive officer a request for identifying the data as affected by an exceptional event and also provides supporting documentation.

5. If the executive officer concurs with the district, he/she will identify the data as affected by an exceptional event.

6. If the district's request for identifying data as affected by an exceptional event cannot be supported, the district will be notified of the reasons. The executive officer will consider any additional data to support the request, but in the absence of any new evidence, will disapprove the request.

Extreme Concentration Events

An extreme concentration event is an event beyond reasonable regulatory control which causes an exceedance of a state standard but which does not qualify as an exceptional event. The causes of an extreme concentration event include but are not limited to unusual meteorology.

The steps for identifying an extreme concentration event are:

1. A district (or the executive officer) identifies questionable data.

2. If the event is not an exceptional event, with an identifiable cause, the executive officer will evaluate the data as affected by an extreme concentration event.

3. In evaluating a possible extreme concentration event, the executive officer shall use the data for the site at which the event is suspected to determine a limit for concentrations expected to recur no more frequently than once in one year. The limit shall be determined using the “exponential tail method” which is incorporated by reference

herein and described in Part I section B.1. of the "Supplement to the Technical Support Document for Proposed Amendments to the Criteria for Designating Areas of California as Nonattainment, Attainment, or Unclassified for State Ambient Air Quality Standards" (May 1992). Using conventional rounding procedures, the limit shall be to be consistent with the level of precision in which the standard is expressed. If the possible extreme concentration exceeds the concentration expected to recur no more frequently than once in one year, the executive officer will consult with the district in identifying the data as affected by an extreme concentration event.

4. When an extreme concentration event is identified, the executive officer shall review other information, including but not limited to meteorological data, to determine whether air quality data for other sites in the area were affected by the extreme concentration event.

Unusual Concentration Events

An unusual concentration event is an event which causes an anomalous exceedance of a state standard and which does not qualify as an exceptional event or an extreme concentration event. An exceedance affected by an unusual concentration event may be identified only for an area designated as attainment or unclassified at the time of the exceedance.

The steps for identifying an unusual concentration event are:

1. A district (or the executive officer) identifies a questionable exceedance(s).

2. If the exceedance(s) has not been identified as having been affected by an exceptional event or an extreme concentration event, and if the area was designated as attainment or unclassified at the time of the exceedance(s), the executive officer will review the exceedance(s) to determine whether it was affected by an unusual concentration event.

3. In evaluating a possible unusual concentration event, the executive officer shall consider all relevant information, including but not limited to the amount and characteristics of air quality data, emission data, meteorological data, potential public health and welfare impacts, and any applicable state, district, and federal rules and regulations. To identify the exceedance(s) as affected by an unusual concentration event, the executive officer must find, based on the relevant information, that the impact of the exceedance(s) is limited to the local area, the exceedance(s) is not expected to recur, and that the data do not support a nonattainment designation.

4. If the exceedance(s) qualifies as possibly affected by an unusual concentration event, the executive officer will consult with the district in identifying the exceedance(s) as affected by an unusual concentration event.

5. An area may retain its attainment or unclassified designation based on the identification and exclusion of an exceedance(s) affected by an unusual concentration event for no more than three consecutive years. If the executive officer identifies an exceedance(s) affected by an unusual concentration event in the area in the fourth consecutive year, the area shall be redesignated as nonattainment.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

APPENDIX 3

CRITERIA FOR DETERMINING DATA COMPLETENESS

This Appendix describes the criteria to be used in determining data completeness for the purpose of designating areas as attainment or nonattainment-transitional as described in Article 3, Subchapter 1.5, Chapter 1, Part III, Title 17 (commencing with section 70300), California Code of Regulations. The purpose of these data completeness criteria is to specify the minimum data deemed necessary to assure that sampling occurred at times when a violation is most likely to occur.

Complete Data

Data for a site will be deemed complete if there are representative data (as determined in accordance with the Representativeness Criteria in Appendix 1) during the required hours (see below) of the day during the required months (see below) for the required years (see below).

Required Hours

The hours of potentially high concentration must be included. Unless a detailed evaluation determines different hours to be appropriate for a specific site, these hours are:

Pollutant	Hours (PST)
Ozone	9 am - 5 pm
Carbon Monoxide	3 pm - 9 am (next day)
Nitrogen Dioxide	8 am - 8 pm
Visibility Reducing Particles	10 am - 6 pm
Other Pollutants	Throughout day

Required Months

The months of potentially high concentrations must be included. Unless a detailed evaluation determines different months to be appropriate for a specific site, these months are:

Pollutant	Months
Ozone	July - September
Carbon Monoxide	January, November - December
Nitrogen Dioxide	October - December
Sulfur Dioxide	September - December
Sulfates	January, June - December
Lead (Particulate)	January, November - December
Other Pollutants	January - December

Required Years

The number of years to be included is:

a) Three; or

b) Two, if during these years the maximum pollutant concentration (not including data found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2) is less than three-fourths the applicable state ambient air quality standard; or

c) One, if during this year the maximum pollutant concentration (not including data found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2) is less than one-half the applicable state ambient air quality standard.

APPENDIX 4

SCREENING PROCEDURE FOR DETERMINING ATTAINMENT DESIGNATIONS FOR AREAS WITH INCOMPLETE AIR QUALITY DATA

This Appendix describes the screening procedure that will serve as the basis for making a pollutant-specific finding under section 70304(c) that the state ambient air quality standard is being attained for areas with no or an incomplete air quality data record. The procedure is applicable only for nitrogen dioxide, sulfur dioxide, sulfates, and lead (particulate). For those areas with some air quality data for the prior three years, the screening procedure will be applied for a pollutant only if the maximum concentrations of that pollutant in the area did not exceed 75 percent of the state standard(s).

Pollutant		**Screening Parameters**	**Screening Values**
Nitrogen Dioxide	a)	Basin Population	1,000,000 people
	b)	Total Annual NOx Emissions in Air Basin	40,000 tons/yr
	c)	Total Annual Point Source NOx Emissions in County	2,100 tons/yr
Sulfur Dioxide	a)	Total Annual Point Source SOx emissions in County	1,700 tons/yr
	b)	Maximum Annual SOx Emissions from Single Facility in County	900 tons/yr
Sulfates	a)	Total Annual SOx Emissions in Air Basin	19,000 tons/yr
	b)	Total Annual Point Source SOx Emissions in County	1,700 tons/yr
	c)	Maximum Annual SOx Emissions from Single Facility in County	900 tons/yr
Lead	a)	County Population	600,000 people
	b)	Maximum Annual Lead Emissions from Single Facility in County	0.5 tons/yr

For an area to which these values are applied, the local values of the applicable screening parameters will be compared to the respective screening values. The area will be presumed to be attainment if none of the applicable screening parameters for a pollutant exceed the associated screening values.

ATTACHMENT C

TEXT OF THE PROPOSED AMENDMENTS

TO THE DESIGNATION CRITERIA

ATTACHMENT C

TEXT OF THE PROPOSED AMENDMENTS TO THE DESIGNATION CRITERIA CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 70300 THROUGH 70306, AND APPENDICES 1 THROUGH 4, THEREOF

(Additions are shown as double underline and deletions as ~~strikeout~~)

70300. General Statement of Purpose

The objective of these criteria is to guide the state board in making designations of ~~air basins~~ areas as attainment, nonattainment, nonattainment-transitional, or unclassified for each of the pollutants for which state ambient air quality standards have been established in Section 70200.

NOTE: Authority Cited: sections 39600, 39601, 39607, ~~and~~ 39608, and 40925.5, Health and Safety Code. Reference: sections 39607, ~~and~~ 39608, and 40925.5, Health and Safety Code.

70301. Air Quality Data Used for Designations

(a) Except as otherwise provided in this article, designations shall be based on "data for record."

(1) "Data for record" are those data collected by or under the auspices of the state board or the districts for the purpose of measuring ambient air quality, and which the executive officer has determined comply with the siting and quality assurance procedures established in Part 58, Title 40, Code of Federal Regulations, as they existed on July 1, 1987, or other equivalent procedures.

(2) ~~The executive officer shall also determine within 90 days of submittal of complete supporting documentation whether a~~ Any other data which are provided by a district or by any other person will be data for record if the executive officer determines within 90 days of submittal of complete supporting documentation that the data comply with the siting and quality assurance procedures established in Part 58, Title 40, Code of Federal Regulations, as they existed on July 1, 1987, or other equivalent procedures ~~and shall be data for record~~. If the executive officer finds there is good cause that 90 days is insufficient time to make a determination, he/she may after notification of the person requesting the data review extend the deadline for completion of the data review.

(b) Except as otherwise provided in this article, designations and reviews of designations ~~shall~~ will be based on data for record for the three calendar years prior to the year in which the designation is made or the annual review of the designation is conducted.

(c) Data as described in section 70301(a)(1) and (2) become data for record upon completion of the executive officer's review.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

70302. Geographic Extent of Designations

(a) An air basin ~~shall~~ will be the area designated for ozone, nitrogen dioxide, suspended particulate matter (PM10), sulfates, and visibility reducing particles. Provided, however, if the state board finds (based on air quality data, meteorology, topography, or the distribution of population and emissions) that there are areas within an air basin with distinctly different air quality deriving from sources and conditions not affecting the entire air basin, the state board may designate an area smaller than an air basin using political boundary lines to the extent practicable. In designating an area smaller than an air basin as nonattainment, the state board ~~shall~~ will include within the area those sources whose emissions contribute to a violation of a standard for that pollutant. Contiguous areas which would have the same designation within an air basin ~~shall~~ will be one designated area.

(b) A county or the portion of a county which is located within an air basin ~~shall~~ will be the area designated for carbon monoxide, sulfur dioxide, lead (particulate), and hydrogen sulfide. Provided, however, if the state board finds (based on air quality data, meteorology, topography, or the distribution of population and emissions) that there are areas within the county with distinctly different air quality, it may designate a smaller area. In designating an area smaller than a county as nonattainment, the state board ~~shall~~ will include within the area those sources whose emissions contribute to a violation of a standard for that pollutant.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 38608, Health and Safety Code.

70303. Criteria for Designating an Area as Nonattainment

(a) The state board ~~shall~~ will designate an area as nonattainment for a pollutant if:

(1) Data for record show at least one violation of a state standard for that pollutant in the area, and the measurement of the violation meets the representativeness criteria set forth in "Criteria for Determining Data Representativeness" contained in Appendix 1 to this article; or

(2) Limited or no air quality data were collected in the area, but the state board finds, based on meteorology, topography, and air quality data for an adjacent nonattainment area, that there has been at least one violation of a state standard for that pollutant in the area being designated.

(b) An area ~~shall~~ will not be designated as nonattainment if the only recorded exceedance(s) of that standard were based solely on data for record determined to be affected by a highly irregular or infrequent event. Data affected by a highly irregular or infrequent event will be identified as such by the executive officer in accordance with the "Air Resources Board Procedure for Reviewing Air Quality Data Possibly Affected by a Highly Irregular or Infrequent Event," set forth in Appendix 2 to this article.

~~(c) The state board shall, if requested by a district no later than May 1 of each year pursuant to section 70306, identify that portion of a designated area within the district as nonattainment-transitional for a pollutant other than ozone with a standard averaging time less than or equal to 24 hours and for which samples are routinely collected every day if it finds that:~~

~~(1) Data for record for the previous calendar year are consistent with the criteria established in section 70304(a)(2) and show two or fewer days at each site in the area with violations of a state standard for that pollutant (not including exceedances found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2);~~

~~(2) Evaluation of multi-year air quality, meteorological, and emission data indicates that ambient air quality either has stabilized or is improving and that every site in the area is expected to reach attainment within three years; and~~

~~(3) The geographic extent of the area is consistent with the criteria established in section 70302.~~

~~(d) An area designated as nonattainment-transitional for a pollutant is close to attaining the standard(s) for that pollutant. The nonattainment-transitional designation provides an opportunity for a district to review and potentially to modify its attainment plan. Any modification to an attainment plan must be consistent with state and federal regulations and statutes.~~

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, ~~and 40925.5,~~ Health and Safety Code. Reference: sections 39607, and 39608, ~~and 40925.5,~~ Health and Safety Code.

70303.1. Criteria for Designating an Area as Nonattainment-Transitional for Pollutants Other than Ozone

(a) Nonattainment-transitional is a subcategory of the nonattainment designation. The state board will, if requested by a district no later than May 1 of each year pursuant to section 70306, identify that portion of a designated area within the district as nonattainment-transitional

for a pollutant other than ozone with a standard averaging time less than or equal to 24 hours and for which samples are routinely collected every day if it finds that:

(1) Data for record for the previous calendar year are consistent with the criteria established in section 70304(a)(2) and show two or fewer days at each site in the area with violations of a state standard for that pollutant (not including exceedances found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2);

(2) Evaluation of multi-year air quality, meteorological and emission data indicates that ambient air quality either has stabilized or is improving and that every site in the area is expected to reach attainment within three years; and

(3) The geographic extent of the area is consistent with the criteria established in section 70302.

(b) An area designated as nonattainment-transitional for a pollutant is close to attaining the standard(s) for that pollutant. The nonattainment-transitional designation provides an opportunity for a district to review and potentially to modify its attainment plan. Any modification to an attainment plan must be consistent with state and federal regulations and statutes.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

70303.5. Requirements for Ozone Nonattainment-Transitional

(a) ~~In evaluating whether a district meets the requirements of HSC 40925.5, the state board shall use the following guidelines:~~ If an area within an air basin is designated as nonattainment for ozone, that area is designated as nonattainment-transitional for ozone if the following conditions are met:

(1) The area is a district, or the area is a portion of a district consistent with the criteria established in section 70302(a);

(2) Data for record ~~for the previous calendar year must be~~ consistent with the criteria established in section 70304(a)(2) ~~to ensure that no more than three exceedances have occurred~~ will be used to determine the number of exceedances for the previous calendar year at each monitoring location in the area;

(~~2~~3) All data collected during the previous calendar year will be considered in the evaluation, including data possibly affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2;

(~~3~~4) Each day with concentration(s) that exceed the state ozone standard will be counted as one exceedance day; ~~and~~

(~~4~~5) ~~No monitoring location may have more than three exceedance days during the previous calendar year~~ If any monitoring location in the area has more than three exceedance days during the previous calendar year, the area is not designated as nonattainment-transitional for ozone; and

(b) If an area qualifies for designation as nonattainment-transitional for ozone for the previous calendar year under section 70303.5(a), and the executive officer has determined that data for the current calendar year indicate more than three exceedance days at any one monitoring location, that area is designated as nonattainment.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 40925.5, Health and Safety Code. Reference: sections 39607 and 40925.5, Health and Safety Code.

70304. Criteria for Designating an Area as Attainment

(a) The state board ~~shall~~ will designate an area as attainment for a pollutant if:

(1) Data for record show that no state standard for that pollutant was violated at any site in the area; and

(2) Data for record meet representativeness and completeness criteria for a location at which the pollutant concentrations are expected to be high based on the spatial distribution of emission sources in the area and the relationship of emissions to air quality. Data representativeness criteria are set forth in "Criteria for Determining Data Representativeness" contained in Appendix 1 to this article. Data completeness criteria are set forth in "Criteria for Determining Data Completeness" contained in Appendix 3 to this article.

(b) Where there are limited or no air quality data for an area, the state board ~~shall~~ will designate the area as attainment for a pollutant if it finds that no state standard for that pollutant has been violated in that area based on:

(1) Air quality data collected in the area during the most recent period since 1980 which meet the conditions in (a) above;

(2) Emissions of that pollutant or its precursors in the area have not increased since that period to a level at which the standard might be exceeded; and

(3) Air quality data collected in the area since the time period in (1) above do not show a violation of the state standard.

(c) Where an area has limited or no air quality data for nitrogen dioxide, sulfur dioxide, sulfates, and lead (particulate), the state board shall designate that area attainment for a pollutant if it finds that no state standard for that pollutant has been violated in that area based on the "Screening Procedure for Determining Attainment Designations for Areas with Incomplete Air Quality Data" set forth in Appendix 4 to this article.

(d) A nonattainment area ~~shall~~ will not be redesignated as attainment for a pollutant if:

(1) Data for record for the monitoring site showing the greatest violation of a state standard for that pollutant no longer are available; and

(2) No other site has been identified as equivalent by the executive officer.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

70305. Criteria for Designating an Area as Unclassified

The state board ~~shall~~ will designate an area as unclassified for a pollutant if it finds that, except as otherwise provided in this article, the data do not support a designation of attainment or nonattainment.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

70306. Annual Review of Designations

(a) The executive officer ~~shall~~ will conduct annual reviews of all designations and ~~shall~~ will propose revisions to the designations as necessary to the state board. The executive officer ~~shall~~ will complete the annual reviews by November 15.

(b) Any request for a change in a designation and any submittal of information for purposes of the executive officer's consideration in the annual review of a designation shall be provided in writing to the executive officer no later than May 1 of each year.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

APPENDIX 1

CRITERIA FOR DETERMINING DATA REPRESENTATIVENESS

This Appendix describes the criteria to be used in determining data representativeness for the purpose of designating areas as described in this Article ~~3, Subchapter 1.5, Chapter 1, Part III, Title 17 (commencing with section 70300), California Code of Regulations~~. Representativeness, as used here, is only related to whether or not the amount of data reported is ~~deemed~~ sufficiently complete to characterize reliably air quality during the respective time period. No other kind of representativeness is implied. The criteria for representativeness are summarized in the accompanying table and discussed further, below.

Air quality statistics are usually computed from short term observed values. For example, an annual arithmetic mean is computed from all available hourly samples. If all the short term values for the statistical time period are available, the calculated statistic is representative. However, because all the short term values for a given period often are not available, a minimum number of observations are needed to provide reasonable assurance that the calculated value is a reliable estimate. In general, statistics are considered representative if 75 percent of the possible short term values are included and are distributed throughout the entire statistical time period.

To ensure that seasonal variations are accounted for, representative annual statistics are required to have four representative calendar quarters of data. Because ~~For example, if an annual mean is based on 24-hour samples, such as that computed for suspended particulate matter (PM10) samples,~~ three representative months are required for each calendar quarter, the ~~. A 24-hour particulate sample is collected once every six days or a total of five samples per 3l-day month. Therefore, three or fewer samples (less than or equal to 60 percent data recovery) do not meet the criterion for a reliable estimate of the monthly mean concentration. The~~ lack of representativeness of the monthly mean concentrations precludes a reliable estimate of a representative calendar quarter, which in turn precludes the representativeness of an annual statistic. Each level of criteria--hour, day, month, quarter, and year--must be met in order to make a representative annual statistic.

For observations made at less than 24-hour intervals, for example, hourly samples, representativeness depends on whether all the individual values are to be used or only a single daily value is to be used. In general, for representative statistics computed from all of the individual values, such as the mean of all hours, 75 percent of the values in the respective period are required. For representative statistics computed from daily values, such as the monthly mean of daily maximum hours, data from 75 percent of the days in the month are required and the data within those days must meet the relevant representativeness criteria.

CRITERIA FOR REPRESENTATIVENESS OF AIR QUALITY MEASUREMENTS AND STATISTICS

Representative Calendar Statistic	Sampling Time Period	Basis of Statistic or Requiremen	Number of Representative Periods Required
Year	Any		4 representative calendar quarters
Quarter	24-hour	Based on a daily sample	3 representative months
	<24-hours	Based on a daily statistic; or	69 or more representative calendar days
		Based on hourly samples	1,643 or more hours
Month	24-hour	Based on daily sample	4 or more 24-hour samples
	<24-hours	Based on a daily statistic; or	23 or more representative calendar days
		Based on all hourly samples; or	548 or more hours
		Based on all 2-hour samples; or	274 or more 2-hour samples
		Based on all 3-hour samples	183 or more 3-hour samples
	1-hour		6 or more hours in each 1/3 day (hours 0 thru 7, 8 thru 15, 16 thru 23), and missing no more than 2 consecutive hourly samples
Day	2-hour	Based on all 2-hour samples	9 or more samples
	3-hour	Based on all 3-hour samples	6 or more samples
	24-hour	Based on daily sample	22 but not more than 26 hours of sampling

Mean of N Hour Period	N	Number of Samples Needed
	24	18 or more hourly samples
	8	6 or more hourly samples
	5	or more hourly samples
	4	3 hourly samples
	3	3 hourly samples
	2	2 hourly samples
	1	30 minutes or more of sampling

APPENDIX 2

AIR RESOURCES BOARD PROCEDURE FOR REVIEWING AIR QUALITY DATA POSSIBLY AFFECTED BY A HIGHLY IRREGULAR OR INFREQUENT EVENT

This Appendix describes the procedures that the Air Resources Board will use for reviewing air quality data possibly affected by a highly irregular or infrequent event with regard to the state ambient air quality standards. All decisions regarding the identification of data as being affected by a highly irregular or infrequent event will be made by the executive officer.

The executive officer will review air quality data for possible identification as affected by a highly irregular or infrequent event if the data are the only exceedances of an air quality standard in the area or if such identification would otherwise affect the designation of the area.

Three types of highly irregular or infrequent events may be identified:

1. Extreme Concentration ~~Exceptional~~ Event.
2. Exceptional ~~Extreme Concentration~~ Event.
3. Unusual Concentration Event.

~~**Exceptional Events**~~

~~An exceptional event is an event beyond reasonable regulatory control which causes an exceedance of a state standard. An exceptional event must be linked to a specific cause such as an act of nature or unusual human activity. As guidance to the states for determining exceptional events, the federal Environmental Protection Agency (EPA) has published Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, (EPA-450/4-86-007), July 1986 (the EPA Guideline). The EPA Guideline provides overall criteria for determining whether an event is exceptional with regard to the national standards. The executive officer will use the EPA Guideline as a general basis for reviewing ambient data, but will not be bound by the specific definitions in the EPA Guideline for the various types of exceptional events because those definitions are made on a national basis. In addition, since what may be exceptional in one part of the state may be common in another, each possible event will be evaluated on a case-by-case basis.~~

~~The steps for identifying an exceptional event are:~~

~~1. A district (or the executive officer) identifies questionable data.~~

~~2. If a known exceptional event has occurred, the district gathers relevant data to document the occurrence.~~

~~3. If an exceptional event is only suspected, the district investigates~~

~~available data for the possible event.~~

~~4. The district submits to the executive officer a request for identifying the data as affected by an exceptional event and also provides supporting documentation.~~

~~5. If the executive officer concurs with the district, he/she will identify the data as affected by an exceptional event.~~

~~6. If the district's request for identifying data as affected by an exceptional event cannot be supported, the district will be notified of the reasons. The executive officer will consider any additional data to support the request, but in the absence of any new evidence, will disapprove the request.~~

Extreme Concentration Events

An extreme concentration event is an event beyond reasonable regulatory control which causes an exceedance of a state standard ~~but which does not qualify as an exceptional event~~. An extreme concentration event is based on a statistical procedure and may not always be linked to a specific identifiable cause. The causes of an extreme concentration event include but are not limited to unusual meteorology.

The steps for identifying an extreme concentration event are:

1. A district (or the executive officer) identifies questionable data.

2. ~~If the event is not an exceptional event, with an identifiable cause, the executive officer will evaluate the data as affected by an extreme concentration event.~~

~~3.~~ In evaluating a possible extreme concentration event, the executive officer ~~shall~~ will use the data for the site at which the event is suspected to determine a limit for concentrations expected to recur no more frequently than once in one year. The limit ~~shall~~ will be determined using the "exponential tail method" described in ~~Part I section B.1. of the "Supplement to the Technical Support Document for Proposed Amendments to the Criteria for Designating Areas of California as Nonattainment, Attainment, or Unclassified for State Ambient Air Quality Standards" (May 1992)~~ Procedure for Computing the Values Used in Identifying Extreme Concentration Events (August 1998), which is incorporated by reference herein. Using conventional rounding procedures, the limit ~~shall~~ will be consistent with the level of precision in which the standard is

expressed. If the possible extreme concentration exceeds the concentration expected to recur no more frequently than once in one year, the executive officer will consult with the district in identifying the data as affected by an extreme concentration event.

~~4~~3. When an extreme concentration event is identified, the executive officer ~~shall~~ will review other information, including but not limited to meteorological data, to determine whether air quality data for other sites in the area were affected by the extreme concentration event.

Exceptional Events

An exceptional event is an event beyond reasonable regulatory control which causes an exceedance of a state standard. An exceptional event must be linked to a specific cause such as an act of nature or unusual human activity. As guidance to the states for determining exceptional events, the federal Environmental Protection Agency (EPA) has published Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, (EPA-450/4-86-007), July 1986 (the EPA Guideline). The EPA Guideline provides overall criteria for determining whether an event is exceptional with regard to the national standards. The executive officer will use the EPA Guideline as a general basis for reviewing ambient data, but will not be bound by the specific definitions in the EPA Guideline for the various types of exceptional events because those definitions are made on a national basis. In addition, since what may be exceptional in one part of the state may be common in another, each possible event will be evaluated on a case-by-case basis.

The steps for identifying an exceptional event are:

1. A district (or the executive officer) identifies questionable data.

2. If a known exceptional event has occurred, the district gathers relevant data to document the occurrence.

3. If an exceptional event is only suspected, the district investigates available data for the possible event.

4. The district submits to the executive officer a request for identifying the data as affected by an exceptional event and also provides supporting documentation.

5. If the executive officer concurs with the district, he/she will identify the data as affected by an exceptional event.

6. If the district's request for identifying data as affected by an exceptional event cannot be supported, the district will be notified of the reasons. The executive officer will consider any additional data to support the request, but in the absence of any new evidence, will disapprove the request.

Unusual Concentration Events

An unusual concentration event is an event which causes an anomalous exceedance of a state standard and which does not qualify as an ~~exceptional event or an~~ extreme concentration event or an exceptional event. An exceedance affected by an unusual concentration event may be identified only for an area designated as attainment or unclassified at the time of the exceedance.

The steps for identifying an unusual concentration event are:

1. A district (or the executive officer) identifies a questionable exceedance(s).

2. If the exceedance(s) has not been identified as having been affected by an extreme concentration event or an exceptional event ~~or an extreme concentration event~~, and if the area was designated as attainment or unclassified at the time of the exceedance(s), the executive officer will review the exceedance(s) to determine whether it was affected by an unusual concentration event.

3. In evaluating a possible unusual concentration event, the executive officer ~~shall~~ will consider all relevant information, including but not limited to the amount and characteristics of air quality data, emission data, meteorological data, potential public health and welfare impacts, and any applicable state, district, and federal rules and regulations. To identify the exceedance(s) as affected by an unusual concentration event, the executive officer must find, based on the relevant information, that the impact of the exceedance(s) is limited to the local area, the exceedance(s) is not expected to recur, and that the data do not support a nonattainment designation.

4. If the exceedance(s) qualifies as possibly affected by an unusual concentration event, the executive officer will consult with the district in identifying the exceedance(s) as affected by an unusual concentration event.

5. An area may retain its attainment or unclassified designation based on the identification and exclusion of an exceedance(s) affected by an unusual concentration event for no more than three consecutive years. If the executive officer identifies an exceedance(s) affected by an unusual concentration event in the area in the fourth consecutive year, the area ~~shall~~ will be redesignated as nonattainment.

NOTE: Authority Cited: sections 39600, 39601, 39607, and 39608, Health and Safety Code. Reference: sections 39607 and 39608, Health and Safety Code.

APPENDIX 3

CRITERIA FOR DETERMINING DATA COMPLETENESS

This Appendix describes the criteria to be used in determining data completeness for the purpose of designating areas as attainment or nonattainment-transitional as described in this Article ~~3, Subchapter 1.5, Chapter 1, Part III, Title 17 (commencing with section 70300), California Code of Regulations~~. The purpose of these data completeness criteria is to specify the minimum data ~~deemed~~ necessary to assure that sampling occurred at times when a violation is most likely to occur.

Complete Data

Data for a site will be ~~deemed~~ complete if there are representative data (as determined in accordance with the Representativeness Criteria in Appendix 1) during the required hours (see below) of the day during the required months (see below) for the required years (see below).

Required Hours

The hours of potentially high concentration must be included. Unless a detailed evaluation determines different hours to be appropriate for a specific site, these hours are:

Pollutant	Hours (PST)
Ozone	9 am - 5 pm
Carbon Monoxide	3 pm - 9 am (next day)
Nitrogen Dioxide	8 am - 8 pm
Visibility Reducing Particles	10 am - 6 pm
Other Pollutants	Throughout day

Required Months

The months of potentially high concentrations must be included. Unless a detailed evaluation determines different months to be appropriate for a specific site, these months are:

Pollutant	Months
Ozone	July - September
Carbon Monoxide	January, November - December
Nitrogen Dioxide	October - December
Sulfur Dioxide	September - December
Sulfates	January, June - December
Lead (Particulate)	January, November - December
Other Pollutants	January - December

Required Years

The number of years to be included is:

a) Three; or

b) Two, if during these years the maximum pollutant concentration (not including data found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2) is less than three-fourths the applicable state ambient air quality standard; or

c) One, if during this year the maximum pollutant concentration (not including data found to be affected by a highly irregular or infrequent event under the procedure set forth in Appendix 2) is less than one-half the applicable state ambient air quality standard.

APPENDIX 4

SCREENING PROCEDURE FOR DETERMINING ATTAINMENT DESIGNATIONS FOR AREAS WITH INCOMPLETE AIR QUALITY DATA

This Appendix describes the screening procedure that will serve as the basis for making a pollutant-specific finding under section 70304(c) that the state ambient air quality standard is being attained for areas with no or an incomplete air quality data record. The procedure is applicable only for nitrogen dioxide, sulfur dioxide, sulfates, and lead (particulate). For those areas with some air quality data for the prior three years, the screening procedure will be applied for a pollutant only if the maximum concentrations of that pollutant in the area did not exceed 75 percent of the state standard(s).

Pollutant		**Screening Parameters**	**Screening Values**
Nitrogen Dioxide	a)	Basin Population	1,000,000 people
	b)	Total Annual NOx Emissions in Air Basin	40,000 tons/yr
	c)	Total Annual Point Source NOx Emissions in County	2,100 tons/yr
Sulfur Dioxide	a)	Total Annual Point Source SOx emissions in County	1,700 tons/yr
	b)	Maximum Annual SOx Emissions from Single Facility in County	900 tons/yr
Sulfates	a)	Total Annual SOx Emissions in Air Basin	19,000 tons/yr
	b)	Total Annual Point Source SOx Emissions in County	1,700 tons/yr
	c)	Maximum Annual SOx Emissions from Single Facility in County	900 tons/yr
Lead	a)	County Population	600,000 people
	b)	Maximum Annual Lead Emissions from Single Facility in County	0.5 tons/yr

For an area to which these values are applied, the local values of the applicable screening parameters will be compared to the respective screening values. The area will be presumed to be attainment if none of the applicable screening parameters for a pollutant exceed the associated screening values.

ATTACHMENT D

SUPPORTING INFORMATION FOR THE

EXTREME CONCENTRATION EVENT PROCEDURE

(DOCUMENT PROPOSED TO BE INCORPORATED BY REFERENCE)

PROCEDURE FOR COMPUTING

THE VALUES USED IN IDENTIFYING

EXTREME CONCENTRATION EVENTS

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INTRODUCTION

This document provides details about the procedure the Air Resources Board (Board) uses in identifying data affected by extreme concentration events. The document is incorporated by reference in Appendix 2 to sections 70300 through 70306, Title 17, California Code of Regulations. These regulations set forth the criteria for designating areas as attainment, nonattainment, or unclassified for the State ambient air quality standards. The designation criteria provide for excluding certain data from the area designation process, including data identified as extreme concentrations.

The Board uses the RECRATE3 procedure to calculate a *limit* for extreme concentrations. This limit is often referred to as the Expected Peak Day Concentration (EPDC) or recurrence rate value. The EPDC or recurrence rate value is both pollutant-specific and site-specific, and it represents the concentration that is expected to be exceeded only once per year, on average. The Board identifies measured pollutant concentrations that are higher than the EPDC (recurrence rate) value as extreme concentration events and excludes them from the State area designation process.

The RECRATE3 procedure described in this document allows for a "calibration" for different pollutants. Calibration may be needed to ensure that the actual rates of exceedances agree with the specified rate. For example, if the specified (theoretical) rate is one exceedance on average per year, the calibration ensures that the actual (observed) rate of exceedances will be very close (over a large number of years) to one per year. The calibration considers many pollutant monitoring sites simultaneously and is not developed on a site-by-site basis. A calibration has been carried out for ozone and the appropriate calibration factor is included in the Board's programs that implement the RECRATE3 procedure. At this time, the Board has not found a need for additional calibration factors.

PROCEDURE FOR COMPUTING EXPECTED PEAK DAY CONCENTRATION (RECURRENCE RATE) VALUES

This section describes the procedure the Board uses for computing the Expected Peak Day Concentration or recurrence rate values. The procedure, known as "RECRATE3," is an improved version of a method (referred to in this document as "RECRATE1") discussed by Larsen and Bradley in June 1991 [Reference 1]. Both RECRATE1 and RECRATE3 use an "exponential-tail" statistical model proposed by Breiman, Gins, and Stone [Reference 2] to estimate air pollutant concentrations with infrequent recurrence rates.

The RECRATE procedure estimates a concentration with a specified recurrence rate by fitting an exponential model to the upper tail of the distribution of measured concentrations. The fitted distribution is then used to determine analytically the concentration expected to recur with the specified frequency.

RECRATE3 incorporates two basic improvements over RECRATE1. First, RECRATE3 replaces a simple average of multiple estimates with a weighted average, where the weights reflect the "goodness-of-fit" associated with each estimate. Second, RECRATE3 compensates for the effects of numerical rounding. Details of the interpolation procedure for rounded data are given in Section 1. c., below.

In addition, the general RECRATE3 method can be calibrated against measured pollutant concentrations for a specific pollutant. A calibration factor can then be included in the calculations. The staff has conducted such a calibration for ozone, which is discussed in Section 2, below.

1. How the Exponential-Tail Model was Applied in RECRATE3

Generic statistical concepts frequently require careful adaptation when applied in a specific context. The exponential-tail model applied in RECRATE3 was adapted to address several issues related to the analysis of air quality data. The following discussion describes important aspects of the practical implementation of the exponential-tail model in RECRATE3 for the purpose of calculating recurrence rate values for determining attainment with respect to the State ambient air quality standards.

a. <u>Time Period</u>

In the context of determining attainment status, RECRATE3 uses three years of daily data (such as daily max-hour ozone or every-sixth-day data for 24-hour PM_{10} concentrations) to compute the value expected to occur no more frequently than once in “X” years, where the Board

has determined that X will be one year. The three-year period used with RECRATE3 is the same as the three-year period used in making the area designations. By using three years of data, RECRATE3 achieves reliability while limiting the influence of differing (and perhaps higher) rates of emissions in the more distant past (more than three years earlier).

b. Missing Data

RECRATE3 estimates recurrence rate values based on the upper tail of the three-year distribution of air quality data. If there are significant gaps in the data record for a three-year period, an estimate could be unreliable. The risk of unreliable results is greatest when missing or unavailable data cause the "seasons" to be represented disproportionately. Therefore, the data must satisfy the completeness criteria established by the Board in the designation criteria regulations (Appendix 3 to Sections 70300 through 70306, Title 17, California Code of Regulations). If data are only measured during the "high season" for a pollutant, the computations may address the concentration expected to occur no more frequently than "1-in-X seasons".

c. Interpolation of Rounded Data

Air quality data are rounded to their smallest significant digit. Although such rounding is appropriate, rounding could cause systematic errors in the RECRATE3 results. The magnitude of the potential errors is related to the precision of the data: the more significant digits in the data, the smaller the potential error. To minimize the impact of rounding, RECRATE3 interpolates the measured values within the rounding range.

The potential for errors occurs because more of the concentrations in the upper tail tend to be rounded up than rounded down. For example, in an exponential-tail containing the highest 20 percent of the measured ozone data at Livermore in the San Francisco Bay Area, the expected frequency of ozone concentrations between 9.5 and 10.0 parts per hundred million (pphm) is greater than the frequency of concentrations between 10.0 and 10.49 pphm. Nevertheless, ozone concentrations in both of these ranges were rounded to 10 pphm prior to 1995 before being stored in the ARB data banks. Since then, ozone data have been stored with parts per billion resolution.

The ARB staff analyzed representative exponential tail distributions for ozone data and found that about two-thirds of the data should be interpolated as less than the rounded concentration while one-third should be interpolated as greater than the rounded concentration. The interpolation procedure in RECRATE3 approximates the overall results expected for an appropriate exponential-tail distribution.

d. Tail Selection

RECRATE3 does not rely on a single upper tail, such as the upper 20 percent. Instead, the procedure computes a recurrence rate value for each tail from the top 20 percent through the top 5 percent. For example, using a three-year period with 1095 days, RECRATE3 computes 165 separate recurrence rate values -- one for the tail with the 219 highest concentrations (top 20%), one for the tail with the 55 highest concentrations (top 5%), and one for each of the tails in between. RECRATE3 computes a weighted average of the individual values to produce a final result (refer to Section 1. g. for details).

e. Fitting the Exponential-Tail Model to the Data

RECRATE3 uses the maximum-likelihood approach for fitting the exponential-tail model to each tail. The base of the tail is first set to zero by subtracting a base value from all the data in the tail. The base value in RECRATE3 is the average of nine concentrations centered on the lowest concentration included in the tail. For example, if the tail includes the highest 100 concentrations, the base is the average of the 104th through the 96th highest concentrations.

After adjusting the base of the tail to zero by subtracting the base value from all of the concentrations, the maximum likelihood estimate of the exponential parameter, λ, is simply the inverse of the average of the zero-based data. That is,

$$\lambda = [(1/n)\Sigma(x - \text{base})]^{-1}$$

f. Calculating the Recurrence Rate Value for a Single Tail

Using λ, find the value "x" for which:

$$1\text{-}F(x) = 1/(D*P)$$

where: $F(x) = 1\text{-}\exp(-\lambda*X)$, the exponential distribution function,
D = number of days in the recurrence interval, and
P = proportion of the whole data set included in the tail.

For example, D would equal 365 days for a 1-in-1 year recurrence rate and 730 days for a 1-in-2 year recurrence rate. P would equal 0.20 for a tail containing the top 20 percent of the data.

The recurrence rate value for an individual tail is the sum of the base value and the value of "x" determined in this step.

g. Determining Weights for the Weighted Average of the Recurrence Rate Values for All Tails

RECRATE3 computes a "Chi-square goodness-of-fit" statistic for each tail that is analyzed. To calculate this statistic, the fitted distribution is partitioned into 10 classes, where each class has an “expected” frequency of 10 percent. The actual data in the tail are then tabulated to determine the "observed" frequencies within each class. The goodness-of-fit statistic is the standard Chi-square statistic based on the differences between the expected and observed frequencies.

$$\text{Chi-square} = \Sigma[(\text{Observed} - \text{Expected})^2 / \text{Expected}]$$

If a tail fits the exponential distribution poorly, the differences between the observed and expected frequencies will be large and the chi-square statistic will be large. Similarly, if the tail fits the exponential distribution well, the chi-square statistic will be small. The weights used in the weighted average are the inverses of the chi-square “goodness-of-fit” statistics, so good fits will be accorded large weights while poor fits are accorded little weight.

The final recurrence rate value (apart from the application of a calibration factor) is the weighted average of the recurrence rate values for all of the tails analyzed. If a calibration factor is needed and available, it is applied to the weighted average, as described below.

h. Determination and Application of a Calibration Factor

Although the general exponential-tail method provides fairly accurate results, a final "calibration" may be needed to ensure that the actual rates of exceedances agree with the specified rate. For example, if the rate specified is one exceedance (on average) every year then the observed rate of exceedances should average very close to one every year. If a calibration factor is needed, it is applied as an exponent to the final weighted average of the separate tail results. Because the exponential-tail model works well, a calibration factor should be close to 1. For example, the ARB staff determined that the appropriate calibration factor for ozone is 0.983, which is very close to 1.

2. Calibrating RECRATE3 for Ozone in California

The RECRATE3 procedure calculates a concentration expected to recur with a specified frequency. Although these concentrations are typically close to their intended targets, the procedure may be improved for some pollutants by calibrating it against measured data for those pollutants. The ARB staff calibrated RECRATE3 against ozone data for a set of sites and determined an appropriate calibration factor for ozone. This calibration factor makes the actual

frequency of exceedances (concentrations above the calculated value) match the specified frequency more closely.

The ARB staff determined the calibration factor for ozone by analyzing the results for two different approaches. This was necessary because ozone data in California are rounded to the nearest part per hundred million. Therefore, the ARB staff determined two calibration factors by analyzing the frequency of exceedances with and without rounding of the calculated recurrence rate values. By using an intermediate value for the final calibration factor, the staff was able to reconcile the specified rate of exceedances with the observed rate of exceedances.

Note that the calibration factor for ozone requires the data to be prepared in parts per hundred million. If data in parts per billion are available, they should be analyzed with one decimal place. For example, a concentration of 85 ppb should be entered as 8.5 pphm.

3. Implementing RECRATE3 for Applications

The Air Resources Board has implemented the concepts discussed in this document in computer code on two platforms -- PC systems using MSDOS (version 5.1 or greater) and the IBM mainframes at the State's Teale Data Center using the MVS operating system. The specific computer code used to implement the conceptual method may be modified from time to time to increase efficiency, add flexibility, improve the ease of use, or correct coding errors. Therefore, the computer codes for personal computers and for IBM mainframe implementations are not included as part of this document.

REFERENCES

1. L. Larsen and R. Bradley. Use of an Exponential-Tail Model to Estimate Ozone Concentrations with an Infrequent Recurrence Rate in California. Proceedings of the 84th Annual Meeting of the Air & Waste Management Association. Vancouver, B.C. (1991).

2. L. Breiman, J. Gins, and C. Stone. Statistical Analysis and Interpretation of Peak Air Pollution Measurements. TSC-PD-A190-10. Technology Service Corporation. (1978).

SUMMARY TABLES SHOWING IMPACT OF RECURRENCE RATE PROGRAMMING CHANGE

As described in Chapter 2 of this Staff Report, the Air Resources Board (Board) staff recently made a minor programming change in the procedure for computing recurrence rate values. The Board uses the recurrence rate values in identifying extreme concentrations which are then excluded from the State area designation process. The following summary tables show the differences resulting from the programming change for a number of sites and pollutants. In general, the differences are very small. Furthermore, implementing the correction does not change the designation status of any area. In other words, those areas that were previously designated as nonattainment remain nonattainment, and those areas previously designated as attainment remain attainment. Implementing the programming change ensures that all future recurrence rate calculations are consistent with the procedures referenced in the designation criteria regulations.

Changes in Ozone 1-Hour Recurrence Rate Values Before and After Code Change (3,580 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	1122	31%
1%	3043	85%
2%	3338	93%
3%	3440	96%
4%	3502	98%
5%	3532	99%
10%	3572	99.8%

Changes in PM_{10} 24-Hour Recurrence Rate Values Before and After Code Change (1337 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	2	0.2%
1%	602	45%
2%	932	70%
3%	1110	83%
4%	1204	90%
5%	1252	94%
10%	1329	99%
maximum = 12.5%		

Changes in CO 1-Hour Recurrence Rate Values Before and After Code Change (96 site/year combinations producing recurrence rate values for 1996 only)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	82	85%
1%	93	97%
2%	94	98%
3%	94	98%
4%	95	99%
5%	95	99%
10%	96	100%
maximum = 5.4%		

Changes in NO_2 1-Hour Recurrence Rate Values Before and After Code Change (2640 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	2082	79%
1%	2547	96%
2%	2597	98%
3%	2612	99%
4%	2627	99.5%
5%	2633	99.7%
10%	2640	100%

Changes in SO_2 1-Hour Recurrence Rate Values Before and After Code Change (1690 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	695	41%
1%	1555	92%
2%	1634	97%
3%	1650	98%
4%	1667	99%
5%	1674	99%
10%	1684	99.6%
maximum = 26.5%		

Changes in SO_2 24-Hour Recurrence Rate Values Before and After Code Change (1682 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	731	43%
1%	1517	90%
2%	1602	95%
3%	1633	97%
4%	1651	98%
5%	1663	99%
10%	1680	99.9%
maximum = 15.1%		

Changes in H_2S 1-Hour Recurrence Rate Values Before and After Code Change (165 site/year combinations producing recurrence rate values)		
Percent Change (+ or -)	**Cumulative Number of Recurrence Rates**	**Cumulative Percent of Recurrence Rates**
0%	94	57%
1%	148	90%
2%	151	92%
3%	156	95%
4%	159	96%
5%	159	96%
10%	164	99%
maximum = 18%		

ATTACHMENT E

TEXT OF THE PROPOSED AMENDMENTS

TO THE AREA DESIGNATIONS

ATTACHMENT E

TEXT OF THE PROPOSED AMENDMENTS TO THE AREA DESIGNATIONS CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 60201 THROUGH 60209

(Additions are shown as *underline italics* and deletions as ~~strikeout~~)

60201. Table of Area Designations for Ozone

Area	Designation
North Coast Air Basin	Attainment
San Francisco Bay Area Air Basin	Nonattainment
North Central Coast Air Basin [1]	~~Nonattainment~~ *Nonattainment-Transitional*
South Central Coast Air Basin	~~Nonattainment~~
San Luis Obispo County [1]	*Nonattainment-Transitional*
Remainder of Basin	*Nonattainment*
South Coast Air Basin	Nonattainment
San Diego Air Basin	Nonattainment
Northeast Plateau Air Basin	Attainment
Sacramento Valley Air Basin	
Butte County	Nonattainment-Transitional
Colusa County [1]	*Nonattainment-Transitional*
Glenn County	Nonattainment-Transitional
Solano County [1]	*Nonattainment-Transitional*
Tehama County [1]	*Nonattainment-Transitional*
Yolo County [1]	*Nonattainment-Transitional*
Remainder of Basin	Nonattainment
San Joaquin Valley Air Basin	Nonattainment
Great Basin Valleys Air Basin	
Alpine County	Unclassified
Inyo County	Unclassified
Mono County	Nonattainment-Transitional
Mojave Desert Air Basin	Nonattainment
Salton Sea Air Basin	Nonattainment

60201. Table of Area Designations for Ozone (continued)

Area	Designation
Mountain Counties Air Basin	
Amador, Calaveras, El Dorado, Nevada,	
~~Placer,~~ Mariposa, and Tuolumne Counties	Nonattainment
Placer County [1]	*Nonattainment-Transitional*
Plumas and Sierra Counties	Unclassified
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Attainment

[1] Designation by operation of law (199~~7~~*8*), under H&SC, section 40925.5.

~~[2] Designation by operation of law (1996), under H&SC, section 40925.5.~~

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section~~s~~ 39608 ~~and 40925.5(a)~~, Health and Safety Code.

60202. Table of Area Designations for Carbon Monoxide

Area	Designation
North Coast Air Basin	
Del Norte County	Unclassified
Humboldt County	Attainment
Mendocino County	Attainment
Sonoma County	Unclassified
Trinity County	Unclassified
San Francisco Bay Area Air Basin	
Alameda County	Attainment
Contra Costa County	Attainment
Marin County	Attainment
Napa County	Attainment
San Francisco County	Attainment
San Mateo County	Attainment
Santa Clara County	Attainment
Solano County	Attainment
Sonoma County	Attainment
North Central Coast Air Basin	
Monterey County	Attainment
San Benito County	Unclassified
Santa Cruz County	Unclassified
South Central Coast Air Basin	
San Luis Obispo County	Attainment
Santa Barbara County	Attainment
Ventura County	Attainment
South Coast Air Basin	
Los Angeles County	Nonattainment
Orange County	Attainment
Riverside County	Attainment
San Bernardino County	Attainment
San Diego Air Basin	Attainment
Northeast Plateau Air Basin	
Lassen County	Unclassified
Modoc County	Unclassified
Siskiyou County	Unclassified

60202. Table of Area Designations for Carbon Monoxide (continued)

Area	Designation
Sacramento Valley Air Basin	
Butte County	Attainment
Colusa County	Unclassified
Glenn County	Unclassified
Placer County	Attainment
Sacramento County	Attainment
Shasta County	Unclassified
Solano County	Attainment
Sutter County	Attainment
Tehama County	Unclassified
Yolo County	Attainment
Yuba County	Unclassified
San Joaquin Valley Air Basin	
Fresno County	*Attainment*
~~Fresno Urbanized Area~~[†]	~~Nonattainment~~
~~Remainder of County~~	~~Attainment~~
Kern County	Attainment
Kings County	Unclassified
Madera County	Unclassified
Merced County	Unclassified
San Joaquin County	Attainment
Stanislaus County	Attainment
Tulare County	Attainment
Great Basin Valleys Air Basin	
Alpine County	Unclassified
Inyo County	Attainment
Mono County	Attainment

60202. Table of Area Designations for Carbon Monoxide (continued)

Area	Designation
Mojave Desert Air Basin	
Kern County	Unclassified
Los Angeles County	Attainment
Riverside County	Unclassified
San Bernardino County	Attainment
Salton Sea Air Basin	
Imperial County	
City of Calexico~~2~~*1*	Nonattainment
Remainder of County	Unclassified
Riverside County	Attainment
Mountain Counties Air Basin	
Amador County	Unclassified
Calaveras County	Unclassified
El Dorado County	Unclassified
Mariposa County	Unclassified
Nevada County	Unclassified
Placer County	Unclassified
Plumas County	Attainment
Sierra County	Unclassified
Tuolumne County	Attainment
Lake County Air Basin	
Lake County	Attainment
Lake Tahoe Air Basin	*Attainment*
~~El Dorado County~~	~~Nonattainment-Transitional~~
~~Placer County~~	~~Attainment~~

~~1. 50 Fed. Reg. 47735 (November 20, 1985); 45 Fed. Reg. 53149 (August 11, 1980); City of Fresno Department of Planning and Inspection, *1974 General Plan Report of the FCMA,* page 4.~~

~~2.~~*1.* section 60200(a).

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60203. Table of Area Designations for Nitrogen Dioxide

Area	Designation
North Coast Air Basin	Attainment
San Francisco Bay Area Air Basin	Attainment
North Central Coast Air Basin	Attainment
South Central Coast Air Basin	Attainment
South Coast Air Basin	Attainment
San Diego Air Basin	Attainment
Northeast Plateau Air Basin	Attainment
Sacramento Valley Air Basin	Attainment
San Joaquin Valley Air Basin	Attainment
Great Basin Valleys Air Basin	Attainment
Mojave Desert Air Basin	Attainment
Salton Sea Air Basin	Attainment
Mountain Counties Air Basin	Attainment
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Attainment

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60204. Table of Area Designations for Sulfur Dioxide

Area	Designation
North Coast Air Basin	Attainment
San Francisco Bay Area Air Basin	
Alameda County	Attainment
Contra Costa County	Attainment
Marin County	Attainment
Napa County	Attainment
San Francisco County	Attainment
San Mateo County	Attainment
Santa Clara County	Attainment
Solano County	Attainment
Sonoma County	Attainment
North Central Coast Air Basin	
Monterey County	Attainment
San Benito County	Attainment
Santa Cruz County	Attainment
South Central Coast Air Basin	
San Luis Obispo County	Attainment
Santa Barbara County	Attainment
Ventura County	Attainment
South Coast Air Basin	
Los Angeles County	Attainment
Orange County	Attainment
Riverside County	Attainment
San Bernardino County	Attainment
San Diego Air Basin	
San Diego County	Attainment
Northeast Plateau Air Basin	
Lassen County	Attainment
Modoc County	Attainment
Siskiyou County	Attainment

60204. Table of Area Designations for Sulfur Dioxide (continued)

Area	Designation
Sacramento Valley Air Basin	
Butte County	Attainment
Colusa County	Attainment
Glenn County	Attainment
Placer County	Attainment
Sacramento County	Attainment
Shasta County	Attainment
Solano County	Attainment
Sutter County	Attainment
Tehama County	Attainment
Yolo County	Attainment
Yuba County	Attainment
San Joaquin Valley Air Basin	
Fresno County	Attainment
Kern County	Attainment
Kings County	Attainment
Madera County	Attainment
Merced County	Attainment
San Joaquin County	Attainment
Stanislaus County	Attainment
Tulare County	Attainment
Great Basin Valleys Air Basin	
Alpine County	Attainment
Inyo County	Attainment
Mono County	Attainment
Mojave Desert Air Basin	
Kern County	Attainment
Los Angeles County	Attainment
Riverside County	Attainment
San Bernardino County	Attainment

60204. Table of Area Designations for Sulfur Dioxide (continued)

Area	Designation
Salton Sea Air Basin	
Imperial County	Attainment
Riverside County	Attainment
Mountain Counties Air Basin	
Amador County	Attainment
Calaveras County	Attainment
El Dorado County	Attainment
Mariposa County	Attainment
Nevada County	Attainment
Placer County	Attainment
Plumas County	Attainment
Sierra County	Attainment
Tuolumne County	Attainment
Lake County Air Basin	
Lake County	Attainment
Lake Tahoe Air Basin	
El Dorado County	Attainment
Placer County	Attainment

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60205. Table of Area Designations for Suspended Particulate Matter (PM10)

Area	Designation
North Coast Air Basin	Nonattainment
San Francisco Bay Area Air Basin	Nonattainment
North Central Coast Air Basin	Nonattainment
South Central Coast Air Basin	Nonattainment
South Coast Air Basin	Nonattainment
San Diego Air Basin	Nonattainment
Northeast Plateau Air Basin	*Nonattainment*
~~Modoc and Siskiyou Counties~~	~~Nonattainment~~
~~Lassen County~~	~~Unclassified~~
Sacramento Valley Air Basin	Nonattainment
San Joaquin Valley Air Basin	Nonattainment
Great Basin Valleys Air Basin	Nonattainment
Mojave Desert Air Basin	Nonattainment
Salton Sea Air Basin	Nonattainment
Mountain Counties Air Basin	
El Dorado, Nevada, Placer Plumas, and Sierra Counties	Nonattainment
Amador County	Unclassified
Calaveras County	Nonattainment
Mariposa County Portion of Yosemite National Park	Nonattainment
Remainder of Mariposa and Tuolumne Counties	Unclassified
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Nonattainment

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code

60206. Table of Area Designations for Sulfates

Area	Designation
North Coast Air Basin	Attainment
San Francisco Bay Area Air Basin	Attainment
North Central Coast Air Basin	Attainment
South Central Coast Air Basin	Attainment
South Coast Air Basin	Attainment
San Diego Air Basin	~~Attainment~~ *Nonattainment*
Northeast Plateau Air Basin	Attainment
Sacramento Valley Air Basin	Attainment
San Joaquin Valley Air Basin	Attainment
Great Basin Valleys Air Basin	Attainment
Mojave Desert Air Basin	
San Bernardino County Portion of Searles Valley Planning Area[1]	Nonattainment
Remainder of Air Basin	Attainment
Salton Sea Air Basin	Attainment
Mountain Counties Air Basin	Attainment
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Attainment

1. 52 Fed. Reg. 29384 (August 7, 1987); U.S. Geological Survey 1974, *Hydrologic Unit Map-State of California*, Hydrological Unit #18090205.

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60207. Table of Area Designations for Lead (Particulate)

Area	Designation
North Coast Air Basin	
Del Norte County	Attainment
Humboldt County	Attainment
Mendocino County	Attainment
Sonoma County	Attainment
Trinity County	Attainment
San Francisco Bay Area Air Basin	
Alameda County	Attainment
Contra Costa County	Attainment
Marin County	Attainment
Napa County	Attainment
San Francisco County	Attainment
San Mateo County	Attainment
Santa Clara County	Attainment
Solano County	Attainment
Sonoma County	Attainment
North Central Coast Air Basin	
Monterey County	Attainment
San Benito County	Attainment
Santa Cruz County	Attainment
South Central Coast Air Basin	
San Luis Obispo County	Attainment
Santa Barbara County	Attainment
Ventura County	Attainment
South Coast Air Basin	
Los Angeles County	Attainment
Orange County	Attainment
Riverside County	Attainment
San Bernardino County	Attainment
San Diego Air Basin	
San Diego County	Attainment
Northeast Plateau Air Basin	
Lassen County	Attainment
Modoc County	Attainment
Siskiyou County	Attainment

60207. Table of Area Designations for Lead (Particulate) (continued)

Area	Designation
Sacramento Valley Air Basin	
Butte County	Attainment
Colusa County	Attainment
Glenn County	Attainment
Placer County	Attainment
Sacramento County	Attainment
Shasta County	Attainment
Solano County	Attainment
Sutter County	Attainment
Tehama County	Attainment
Yolo County	Attainment
Yuba County	Attainment
San Joaquin Valley Air Basin	
Fresno County	Attainment
Kern County	Attainment
Kings County	Attainment
Madera County	Attainment
Merced County	Attainment
San Joaquin County	Attainment
Stanislaus County	Attainment
Tulare County	Attainment
Great Basin Valleys Air Basin	
Alpine County	Attainment
Inyo County	Attainment
Mono County	Attainment

60207. Table of Area Designations for Lead (Particulate) (continued)

Area	Designation
Mojave Desert Air Basin	
Kern County	Attainment
Los Angeles County	Attainment
Riverside County	Attainment
San Bernardino County	Attainment
Salton Sea Air Basin	
Imperial County	Attainment
Riverside County	Attainment
Mountain Counties Air Basin	
Amador County	Attainment
Calaveras County	Attainment
El Dorado County	Attainment
Mariposa County	Attainment
Nevada County	Attainment
Placer County	Attainment
Plumas County	Attainment
Sierra County	Attainment
Tuolumne County	Attainment
Lake County Air Basin	
Lake County	Attainment
Lake Tahoe Air Basin	
El Dorado County	Attainment
Placer County	Attainment

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60208. Table of Area Designations for Hydrogen Sulfide

Area	Designation
North Coast Air Basin	
Del Norte County	Unclassified
Humboldt County	Attainment
Mendocino County	Unclassified
Sonoma County	
Geyser Geothermal Area[1]	Attainment
Remainder of County	Unclassified
Trinity County	Unclassified
San Francisco Bay Area Air Basin	
Alameda County	Unclassified
Contra Costa County	Unclassified
Marin County	Unclassified
Napa County	Unclassified
San Francisco County	Unclassified
San Mateo County	Unclassified
Santa Clara County	Unclassified
Solano County	Unclassified
Sonoma County	Unclassified
North Central Coast Air Basin	
Monterey County	Unclassified
San Benito County	Unclassified
Santa Cruz County	Unclassified
South Central Coast Air Basin	
San Luis Obispo County	Attainment
Santa Barbara County	Attainment
Ventura County	Unclassified
South Coast Air Basin	
Los Angeles County	Unclassified
Orange County	Unclassified
Riverside County	Unclassified
San Bernardino County	Unclassified
San Diego Air Basin	
San Diego County	Unclassified
Northeast Plateau Air Basin	
Lassen County	Unclassified
Modoc County	Unclassified
Siskiyou County	Unclassified

60208. Table of Area Designations for Hydrogen Sulfide (continued)

Area	Designation
Sacramento Valley Air Basin	
Butte County	Unclassified
Colusa County	Unclassified
Glenn County	Unclassified
Placer County	Unclassified
Sacramento County	Unclassified
Shasta County	Unclassified
Solano County	Unclassified
Sutter County	Unclassified
Tehama County	Unclassified
Yolo County	Unclassified
Yuba County	Unclassified
San Joaquin Valley Air Basin	
Fresno County	Unclassified
Kern County	Unclassified
Kings County	Unclassified
Madera County	Unclassified
Merced County	Unclassified
San Joaquin County	Unclassified
Stanislaus County	Unclassified
Tulare County	Unclassified
Great Basin Valleys Air Basin	
Alpine County	Unclassified
Inyo County	Attainment
Mono County	Attainment

60208. Table of Area Designations for Hydrogen Sulfide (continued)

Area	Designation
Mojave Desert Air Basin	
Kern County	Unclassified
Los Angeles County	Unclassified
Riverside County	Unclassified
San Bernardino County	
County Portion of	
Searles Valley Planning Area[2]	Nonattainment
Remainder of County	Unclassified
Salton Sea Air Basin	
Imperial County	Unclassified
Riverside County	Unclassified
Mountain Counties Air Basin	
Amador County	
City of Sutter Creek	Nonattainment
Remainder of County	Unclassified
Calaveras County	Unclassified
El Dorado County	Unclassified
Mariposa County	Unclassified
Nevada County	Unclassified
Placer County	Unclassified
Plumas County	Unclassified
Sierra County	Unclassified
Tuolumne County	Unclassified
Lake County Air Basin	
Lake County	Attainment
Lake Tahoe Air Basin	
El Dorado County	Unclassified
Placer County	Unclassified

1. section 60200(d).
2. 52 Fed. Reg. 29384 (August 7, 1987); U.S. Geological Survey 1974, *Hydrologic Unit Map-State of California*, Hydrological Unit #18090205.

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

60209. Table of Area Designations for Visibility Reducing Particles

Area	Designation
North Coast Air Basin	Unclassified
San Francisco Bay Area Air Basin	Unclassified
North Central Coast Air Basin	Unclassified
South Central Coast Air Basin	Unclassified
South Coast Air Basin	Unclassified
San Diego Air Basin	Unclassified
Northeast Plateau Air Basin	Unclassified
Sacramento Valley Air Basin	Unclassified
San Joaquin Valley Air Basin	Unclassified
Great Basin Valleys Air Basin	Unclassified
Mojave Desert Air Basin	Unclassified
Salton Sea Air Basin	Unclassified
Mountain Counties Air Basin	Unclassified
Lake County Air Basin	Attainment
Lake Tahoe Air Basin	Unclassified

NOTE: Authority cited: sections 39600, 39601, and 39608, Health and Safety Code. Reference: section 39608, Health and Safety Code.

ATTACHMENT F

EXPECTED PEAK DAY CONCENTRATIONS

AND

DESIGNATION VALUES

ATTACHMENT F

EXPECTED PEAK DAY CONCENTRATIONS AND DESIGNATION VALUES

This attachment tabulates the Expected Peak Day Concentrations and Designation Values for various pollutants. The Expected Peak Day Concentration (EPDC) represents the concentration that statistically is estimated to recur once per year. In the area designation process, measured concentrations that are higher than the calculated EPDC, after the EPDC is rounded to the precision of the relevant State standard, are identified as affected by an extreme concentration event and are not considered violations of the State standards. Designation Value (DV) refers to the highest measured concentration remaining at a given site after all measured concentrations affected by extreme concentration events are excluded. In the calculations of EPDCs, concentrations affected by Exceptional Events or Unusual Concentration Events are not excluded. However, measured concentrations that are identified as affected by an Exceptional Event or Unusual Concentration Event are excluded from being considered as the DV. If the highest DV within an area does not exceed the State standard, and all other criteria are met, then the area can be considered in attainment for that pollutant.

For example, if the calculated ozone EPDC for a site is 0.096 ppm, and the four highest measured concentrations are 0.12, 0.11, 0.10, and 0.09 ppm, then the DV is equal to 0.10 ppm. This is because the EPDC of 0.096 ppm would be first rounded to 0.10 ppm (consistent with the precision of the ozone standard which is two decimal places), and 0.10 ppm is the highest measured concentration equal to or lower than the rounded EPDC. The measured concentrations of 0.12 ppm and 0.11 ppm are higher than the rounded EPDC of 0.10 ppm and therefore are not considered as the Designation Value.

The EPDCs and DVs listed in this attachment are based on air quality data collected during 1995 through 1997. This is the most recent three-year period for which air quality data are available and is the same three-year period used in reviewing the area designations described in the accompanying Staff Report. The EPDCs and DVs are listed for each site in the State with appropriate data. Concentrations are listed for ozone, carbon monoxide (1-hour and 8-hour averages), nitrogen dioxide, sulfur dioxide (1-hour and 24-hour averages), suspended particulate matter or PM_{10}, and hydrogen sulfide. The EPDCs and DVs for sulfates are not presented because there was only one exceedance, which is discussed in Chapter III, Section E of this report. The EPDCs and DVs for lead have not been calculated because there were no exceedances of the State standard for lead. Data are insufficient for listing the EPDCs and DVs for visibility reducing particles.

Because some sites listed in this attachment may not have representative or complete data, this attachment provides additional information for a review of the degree of data completeness at each site. In the tables under the heading "Valid," a "Y" indicates that the EPDC for that site is valid, and a "N" indicates that the EPDC is not valid. The validity of the EPDC is based on the "High-Day Coverage" for each of the three years, also shown in the tables. The high-day

coverage is the percentage of “expected high days” that are complete during the year. The expected high days are those days specific to each given site that historically have daily maximum concentrations in the top ten percent of all daily maximum concentrations, determined based on data for the seven years through 1996.

The table lists the high-day coverage for all years with air quality data, regardless of the level of the coverage. A zero high-day coverage indicates that some air quality data are available for that year but for less than one percent of the expected high days. A blank entry under the high-day coverage heading indicates that no air quality data are available for that year.

The EPDC is calculated using only the data for the year(s) where the high-day coverage is at least 50 %, i.e., not necessarily using all years where a high-day coverage is shown in the table. An EPDC is not calculated, as indicated by a blank entry under the EPDC heading, if the high-day coverage is less than 50 % for each of the three years.

A value listed under the EPDC heading does not necessarily indicate that there is a valid EPDC for that site. The calculated EPDC is considered “valid” only if the data meet one of the following three conditions: (1) if the high-day coverage is at least 75 % for each of the three years; (2) if the high-day coverage is at least 75 % for each of two years and the EPDC is less than or equal to 75 % of the applicable State standard; or (3) if the high-day coverage is at least 75 % for one year and the EPDC is less than or equal to 50 % of the applicable State standard.

When the EPDC is not calculated or the calculated EPDC is not considered valid, the EPDC is not used in determining the DV. In these cases, the DV is simply the highest measured concentration at the site during the specified three-year period, after excluding data affected by exceptional events and unusual concentration events, if any.

Finally, the EPDC is the same indicator that the Air Resources Board endorsed for the air pollution control and air quality management districts to use as an indicator in reporting their progress toward attainment of the State standards, as required by the Health and Safety Code sections 40924(b) and (c). The use of the EPDC is described more fully in the document titled: "Guidance for Using Air Quality-Related Indicators in Reporting Progress in Attaining the State Ambient Air Quality Standards" (Air Resources Board, September 1993).

ATTACHMENT G

MAPS AND TABLES

OF THE AREA DESIGNATIONS FOR

STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

ATTACHMENT G

MAPS AND TABLES
OF THE AREA DESIGNATIONS FOR
STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS

A. INTRODUCTION

This attachment fulfills the requirement of Health and Safety Code, section 40718 for the Air Resources Board (the Board) to publish maps that identify where one or more violations of any State or federal ambient air quality standard have been measured. Federal standards are the National Ambient Air Quality Standards promulgated under section 109 of the federal Clean Air Act (42 U.S.C. 7409).

The attachment is divided into three sections. Section 1 details the levels and specific requirements of both the State and the national ambient air quality standards.

Section 2 contains maps and tables showing the area designations for each pollutant for which there is a State ambient air quality standard (State standard). These maps and summary tables reflect the proposed amendments to the area designations that the Board will consider in September 1998, pursuant to Health and Safety Code section 39608. An attainment designation indicates that pollutant concentrations in the area did not violate the State standard for that pollutant, excluding exceedances affected by highly irregular or infrequent events as defined in Appendix 2 to the designation criteria. A nonattainment designation indicates that a pollutant concentration did violate the State standard at least once during the previous three calendar years. Again, exceedances affected by highly irregular or infrequent events are not considered as violations. An unclassified designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or nonattainment. In addition to these three major designation categories, there is a subcategory of the nonattainment designation called nonattainment-transitional. This subcategory applies to nonattainment areas that are close to attainment and meet other conditions as specified in the designation criteria.

Section 3 contains maps and summary tables showing the area designations for each pollutant for which there is a national ambient air quality standard (national standard). These area designations have been promulgated as final by the United States Environmental Protection Agency (U.S. EPA) based on the requirements in section 107(d) of the Clean Air Act as amended in 1990 (42 U.S.C. 7407(d)).

1. State and National Ambient Air Quality Standards

The Board has adopted and the U.S. EPA has promulgated ambient air quality concentration levels that define good air quality. These levels are the ambient air quality standards and were established to protect human health and/or welfare. The levels of the State and national standards may differ because the Board and the U.S. EPA considered different bodies of information, and the Board chose to provide a wider margin of safety in the State standards than did the U.S. EPA in the national standards.

An ambient air quality standard is a concentration level expressed in either parts per million or micrograms per cubic meter and averaged over a specific time period such as one-hour, eight-hours, 24-hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Some ambient air quality standards are expressed as a concentration that is not to be exceeded. Others are expressed as a concentration that is not to be equaled or exceeded.

The national standards are further categorized as primary standards and secondary standards. The primary national standards are meant to protect public health. The secondary national standards are meant to protect the public welfare from any known or anticipated adverse effects of the pollutant.

The following table contains information for both the State standards and the national standards. The table includes the new national ozone, PM_{10}, and $PM_{2.5}$ standards, promulgated by the U.S. EPA in July 1997 and made effective in September 1997. Specifically, the table lists the applicable pollutant levels, averaging times, and analytical measurement methods.

[Insert the A.Q. Standards table here as page G-3]

Footnotes

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter--PM10, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25ºC and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25ºC and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method’ and must be approved by the U.S. EPA.

8. New national 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. The national 1-hour ozone standard continues to apply in areas that violate the standard. Contact U.S. EPA for further clarification and current federal policies.

2. Area Designations for the State Ambient Air Quality Standards

This section contains a description of the area designations for each pollutant for which there is a State ambient air quality standard listed in the California Code of Regulations, Title 17, section 70200. The information presented reflects the proposed amendments to the area designations that the Board will consider in September 1998.

The area designations for each pollutant are presented in the form of a map and a summary table. Areas are identified as attainment, nonattainment, nonattainment-transitional, or unclassified for each pollutant, as shown below:

Attainment	**A**
Nonattainment	**N**
Nonattainment-Transitional	**T**
Unclassified	**U**

Generally, the Board designates areas by air basin or county. However, when there are areas of an air basin or county with distinctly different air quality deriving from sources and conditions not affecting the entire air basin or county, the Board may designate a smaller area. Generally, when the boundaries of the designated area differ from the air basin or county boundaries, the description of the specific area is referenced at the bottom of the summary table.

3. Area Designations for the National Ambient Air Quality Standards

This section contains a description of the area designations for each pollutant for which there is a national ambient air quality standard, except lead. The national lead standard was promulgated after the Federal Clean Air Act was amended in 1977; and in promulgating the national lead standard, the United States Environmental Protection Agency (U.S. EPA) did not require areas to be designated in a manner similar to other pollutants. The area designations for each pollutant are presented in the form of a map and a summary table.

The U.S. EPA uses two categories to designate areas with respect to ozone, carbon monoxide, and nitrogen dioxide. These designation categories are:

- Does not meet primary standards, and
- Cannot be classified or better than national standards.

Areas that do not meet the primary national standards for these pollutants are indicated on the following maps and summary tables as "N" for nonattainment. Areas that cannot be classified or are better than the national standards are indicated as "U/A" for unclassified/attainment.

In addition, with the promulgation of the new national eight-hour ozone standard in July 1997, the previous one-hour ozone standard was declared by the U.S. EPA on June 5, 1998, as no longer applicable to a number of areas in California. These areas are so indicated in the map and summary table for ozone.

The U.S. EPA uses four categories to designate areas with respect to sulfur dioxide. These designation categories are:

- Does not meet the primary standards,
- Does not meet the secondary standards,
- Cannot be classified, and
- Better than the national standards.

In California, the first two designation categories listed above do not apply. The map and summary table for sulfur dioxide show areas that cannot be classified as "U" for unclassifiable and areas that are better than the national standards as "A" for attainment.

Finally, the U.S. EPA uses two categories to designate areas with respect to suspended particulate matter (PM_{10}). These designation categories are:

- Nonattainment, and
- Unclassifiable.

The map and summary table for the national PM_{10} standards indicate "N" for areas designated as nonattainment and "U" for areas that are unclassifiable.

From time to time, the boundaries of the California air basins have been changed to facilitate the planning process. The Board generally initiates these changes, and they are not always reflected in the U.S. EPA's area designations for California. For purposes of consistency, all maps in this attachment reflect the current air basin boundaries as adopted by the Board. For example, the maps show the western portion of Placer County as being in the Sacramento Valley Air Basin while the national area designations, based on previous information, identify the western portion of Placer County as being in the Mountain Counties Air Basin. Also, while the national area designations reflect the former Southeast Desert Air Basin, the maps in this section show the new Mojave Desert and Salton Sea Air Basins (which replace the Southeast Desert Air Basin), as established by the Board in 1996 in accordance with H&SC, section 39606.1. Nevertheless, the maps and summary tables in this section reflect the area designations as promulgated by the U.S. EPA.

These maps and tables do not show the area designations for the new national ozone, PM_{10}, or $PM_{2.5}$ standards promulgated by the U.S. EPA in July 1997. Area designations for these new standards are not expected for several years. As the U.S. EPA makes the designations, these maps and summary tables will be updated.

ATTACHMENT H

NOTICES

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