Final Regulation Order
for the Rulemaking to Consider Amendments to
Regulations for the State Ambient Air Quality Standard for Ozone

Note: Language to be added is underlined and Language to be removed is shown in strikeout. Asterisks (****) indicate that a portion of the regulation is not included here.

Note: Section 70200, Table of Standards, no changes are proposed to standards for any substances not listed.

Amendments to sections 70100, 70100.1, and 70200 (Table of Standards) of title 17, California Code of Regulation, as noticed on March 11 and October 27, 2005 to read as follows:

Subchapter 1.5. Air Basins and Air Quality Standards

Article 2. Ambient Air Quality Standards

Section 70100. Definitions

(g) Oxidant. Oxidant is a substance that oxidizes a selected reagent that is not oxidizable by oxygen under ambient conditions. For the purposes of this section, oxidant includes ozone, organic peroxides, and peroxyacyl nitrates but not nitrogen dioxide. Atmospheric oxidant concentrations are to be measured with ozone as a surrogate by ultraviolet photometry, or by an equivalent method.

(h) Carbon Monoxide

(i) Sulfur Dioxide

(j) Suspended Particulate Matter (PM10). Suspended particulate matter (PM10) refers to atmospheric particles, solid and liquid, except uncombined water as measured by a (PM10) sampler which collects 50 percent of all particles of 10 mm aerodynamic diameter and which collects a declining fraction of particles as their diameter increases and an increasing fraction of particles as their diameter decreases, reflecting the characteristics of lung deposition. Suspended particulate matter (PM10) is to be measured by a California Approved Sampler (CAS) for PM10, for purposes of monitoring for compliance with the Suspended Particulate Matter (PM10) standards. Approved samplers, methods, and instruments are listed in Section 70100.1(a) below. A CAS for PM10 includes samplers, methods, or instruments determined by the Air
Resources Board or the Executive Officer to produce equivalent results for PM10 with the Federal Reference Method (40 CFR, part 50, Appendix M, as published in 62 Fed. Reg. 38763, July 18, 1997).

(jk) Fine Suspended Particulate Matter (PM2.5). Fine suspended particulate matter (PM2.5) refers to suspended atmospheric particles solid and liquid, except uncombined water as measured by a PM2.5 sampler which collects 50 percent of all particles of 2.5 mm aerodynamic diameter and which collects a declining fraction of particles as their diameter increases and an increasing fraction of particles as their diameter decreases, reflecting the characteristics of lung deposition. Fine suspended particulate matter (PM2.5) is to be measured by a California Approved Sampler (CAS) for PM2.5 for purposes of monitoring for compliance with the Fine Particulate Matter (PM2.5) standards. Approved samplers, methods, and instruments are listed in Section 70100.1(b) below. A CAS for PM2.5 includes samplers, method, and instruments determined by the Air Resources Board or the Executive Officer to produce equivalent results for PM2.5 with the Federal Reference Method (40 CFR, part 50, Appendix L, as published in 62 Fed. Reg. 38763, July 18, 1997).

(kl) Visibility Reducing Particles ***

(lm) Hydrogen Sulfide ***

(mn) Nitrogen Dioxide ***

(ne) Lead (particulate) ***

(op) Sulfates ***

(pq) Vinyl Chloride ***

(qr) Ozone ***

(rs) Extinction Coefficient ***

Section 70100.1. Methods, Samplers, and Instruments for Measuring Pollutants

a) PM10 Methods. The following samplers, methods, and instruments are California Approved Samplers for PM10 for the purposes of monitoring for compliance with the Suspended Particulate Matter (PM10) standards: The method for determining compliance with the PM10 ambient air quality standard shall be the Federal Reference Method for the Determination of Particulate Matter as PM10 in the Atmosphere (40 CFR, Chapter 1, part 50, Appendix M, as published in 62 Fed. Reg., 38753, July 18, 1997). California Approved Samplers for PM10 are set forth in "Air Monitoring Quality Assurance Manual Volume IV, Part A: Monitoring Methods for PM10", adopted March 10, 2006, which is incorporated by reference herein. Samplers, methods, or instruments determined in writing by the Air Resources Board or the Executive Officer to produce equivalent results for PM10 shall also be California Approved Samplers for PM10. These include those continuous samplers that have been demonstrated to the satisfaction of the Air Resources Board to produce measurements equivalent to the Federal Reference Method.

(1) Federal Reference Method for the Determination of Particulate Matter as PM10 in the Atmosphere (40 CFR, Chapter 1, part 50, Appendix M, as published in 62 Fed. Reg., 38753, July 18, 1997). The specific samplers approved are:


(2) Continuous samplers:

(A) Andersen Beta Attenuation Monitor Model FH 62 C14 equipped with the following components: louvered PM10 inlet, volumetric flow controller,
automatic filter change mechanism, automatic zero check, and calibration control foils kit.

(B) Met One Beta Attenuation Monitor Model 1020 equipped with the following components: louvered PM10 size selective inlet, volumetric flow controller, automatic filter change mechanism, automatic heating system, automatic zero and span check capability.

(C) Rupprecht & Patashnick Series 8500 Filter Dynamics Measurement System equipped with the following components: louvered PM10 size selective inlet, volumetric flow control, flow splitter (3 liter/min sample flow), sample equilibration system (SES) dryer, TEOM sensor unit, TEOM control unit, switching valve, purge filter conditioning unit, and palliflex TX40, 13 mm effective diameter cartridge.

b) PM2.5 Methods. The following samplers, methods, and instruments are California Approved Samplers for PM2.5 for the purposes of monitoring for compliance with the Fine Particulate Matter (PM2.5) standards: The method for determining compliance with the PM2.5 ambient air quality standard shall be the Federal Reference Method for the Determination of Particulate Matter as PM2.5 in the Atmosphere, 40 CFR, Chapter 1, part 50, Appendix L, as published in 62 Fed. Reg., 38714, July 18, 1997 and as amended in 64 Fed. Reg., 19717, April 22, 1999. The samplers listed in the Federal Reference Method must use either the WINS impactor or the U.S. EPA-approved very sharp cut cyclone (67 Fed. Reg., 15566, April 2, 2002) to separate PM2.5 from PM10. California Approved Samplers for PM2.5 are set forth in "Air Monitoring Quality Assurance Manual Volume IV, Part B: Monitoring Methods for PM2.5", adopted March 10, 2006, which is incorporated by reference herein. Samplers, methods, or instruments determined in writing by the Air Resources Board or the Executive Officer to produce equivalent results for PM2.5 shall also be California Approved Samplers for PM2.5. These include those continuous samplers that have been demonstrated to the satisfaction of the Air Resources Board to produce measurements equivalent to the Federal Reference Method.


(2) Continuous samplers:

(A) Andersen Beta Attenuation Monitor Model FH 62 C14 equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow controller, automatic filter change mechanism, automatic zero check, and calibration control foils kit*.

(B) Met One Beta Attenuation Monitor Model 1020 equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow controller, automatic filter change mechanism, automatic heating system, and automatic zero and span check capability*.

(C) Rupprecht & Patashnick Series 8500 Filter Dynamics Measurement System equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow control, flow splitter (3 liter/min sample flow), sample equilibration system (SES) dryer, TEOM sensor unit, TEOM control unit, switching valve, purge filter conditioning unit, and palliflex TX40, 13 mm effective diameter cartridge*. 
Instrument shall be operated in accordance with the vendor's instrument operation manual that adheres to the principles and practices of quality control and quality assurance as specified in Volume I of the “Air Monitoring Quality Assurance Manual”, as printed on April 17, 2002, and available from the California Air Resources Board, Monitoring and Laboratory Division, P.O. Box 2815, Sacramento CA 95814, incorporated by reference herein.

(c) Ozone Methods. The method for determining compliance with the ozone ambient air quality standard shall be the Federal Equivalent Method for the Determination of Ozone in the Atmosphere (40 CFR, part 53). California Approved Samplers for ozone are set forth in "Air Monitoring Quality Assurance Manual Volume IV, Part C: Monitoring Methods for Ozone", as adopted March 10, 2006. Samplers, methods, or instruments determined in writing by the Air Resources Board or the Executive Officer to produce equivalent results for ozone shall also be California Approved Samplers for ozone.

### Section 70200. Table of Standards

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration and Methods*</th>
<th>Duration of Averaging Periods</th>
<th>Most Relevant Effects</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone</td>
<td>0.09 ppm**</td>
<td>1 hour</td>
<td>a. Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals. One-hour and multi-hour exposures: lung function decrements, and symptoms of respiratory irritation such as cough, wheeze, and pain upon deep inhalation. (2) Multi-hour exposures: airway hyperreactivity and airway inflammation. (3) Risk to public health implied by alterations in pulmonary morphology and host defence in animals. (3) Excess deaths, hospitalization, emergency room visits, asthma exacerbation, respiratory symptoms and restrictions in activity.</td>
<td>a. The standard is intended to prevent adverse human health effects.</td>
</tr>
<tr>
<td></td>
<td>0.070 ppm**</td>
<td>8 hour</td>
<td></td>
<td>b. The standard, when achieved, will not prevent all injury to crops and other types of vegetation, but is intended to place an acceptable upper limit on the amount of yield and economic loss, as well as on adverse environmental impacts.</td>
</tr>
<tr>
<td></td>
<td>ultraviolet photometry using California Approved Sampler as set forth in section 70100.1 (c)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. The standard is intended to prevent adverse human health effects.

b. The standard, when achieved, will not prevent all injury to crops and other types of vegetation, but is intended to place an acceptable upper limit on the amount of yield and economic loss, as well as on adverse environmental impacts.

c. Welfare effects:
   (1) Yield loss in important crops and predicted economic loss to growers and consumers.
   (2) Injury and damage to forests, native plants and potential changes in species diversity and number.
   (3) Damage to rubber and elastomers and to paints, fabric, dyes, pigments, and plastics.
### Suspended Particulate Matter (PM10)

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 µg/m³ PM10*</td>
<td>Prevention of excess deaths, illness and restrictions in activity from short- and long-term exposures. Illness outcomes include, but are not limited to, respiratory symptoms, bronchitis, asthma exacerbation, emergency room visits and hospital admissions for cardiac and respiratory diseases. Sensitive subpopulations include children, the elderly, and individuals with pre-existing cardiopulmonary disease. This standard applies to suspended matter as measured by PM10 sampler, which collects 50% of all particles of 10 µm aerodynamic diameter and collects a declining fraction of particles as their diameter increases, reflecting the characteristics of lung deposition.</td>
</tr>
<tr>
<td>20 µg/m³ PM10**</td>
<td>Using California Approved Sampler as listed set forth in section 70100.1(a)</td>
</tr>
</tbody>
</table>

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** The list of California Approved Samplers may be obtained from the Air Resources Board, Monitoring and Laboratory Division, P.O. Box 2815, Sacramento, CA 95814. Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

** These standards are violated when concentrations exceed those set forth in the body of the regulation. All other standards are violated when concentrations equal or exceed those set forth in the body of the regulation.

*** Applicable statewide unless otherwise noted.

**** These standards are violated when particle concentrations cause measured light extinction values to exceed those set forth in the regulations.