COMMONWEALTH OF VIRGINIA
STATE AIR POLLUTION CONTROL BOARD
REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION
9 VAC 5 CHAPTER 30.
AMBIENT AIR QUALITY STANDARDS.

9VAC5-30-10. General.

A. The provisions of this chapter, unless specified otherwise, shall apply throughout the Commonwealth of Virginia.

B. Ambient air quality standards are required to assure that ambient concentrations of air pollutants are consistent with established criteria and shall serve as the basis for effective and reasonable management of the air resources of the Commonwealth of Virginia.

C. Primary ambient air quality standards define levels of air quality which, allowing an adequate margin of safety, are necessary to protect the public health. Secondary ambient air quality standards define more stringent levels of air quality which are necessary to protect the public welfare from any known or anticipated adverse effects associated with the presence of air pollutants in the ambient air. At such time as additional pertinent information becomes available with respect to applicable air quality criteria, such information will be considered and the ambient air quality standards will be revised accordingly.

D. The absence of a specific ambient air quality standard shall not preclude action by the board to control pollutants to assure protection, safety, welfare and comfort of the people of the Commonwealth of Virginia.

E. Where applicable, all measurements of air quality shall be corrected to a reference temperature of 77 degrees Fahrenheit and to a reference pressure of 14.7 pounds per square inch absolute.

9VAC5-30-15. Reference conditions.

All measurements of air quality that are expressed as mass per unit volume (e.g., micrograms per ~~cubic meter) other than for the particulate matter ($PM_{2.5}$) standards contained in 9VAC5-30-65 and 9VAC5-30-66 and lead standards contained in 9VAC5-30-80 shall be corrected to a reference temperature of 25°C and a reference pressure of 760 millimeters of mercury (1,013.2 millibars). Measurements of $PM_{2.5}$ for purposes of comparison to the standards contained in 9VAC5-30-65 and 9VAC5-30-66 and of lead for purposes of comparison to the standards contained in 9VAC5-30-80 shall be reported based on actual ambient air volume measured at the actual ambient temperature and pressure at the monitoring site during the measurement period.~~

All measurements of air quality that are expressed as mass per unit volume (e.g., micrograms per cubic meter) other than for the particulate matter ($PM_{2.5}$) standards contained in 9VAC5-30-65, 9VAC5-30-66, and 9VAC5-30-67, and lead standards contained in 9VAC5-30-80 shall be corrected to a reference temperature of 25°C and a reference pressure of 760 millimeters of mercury (1,013.2 millibars). Measurements of $PM_{2.5}$ for purposes of comparison to the standards contained in 9VAC5-30-65, 9VAC5-30-66, and 9VAC5-30-67 and of lead for purposes of comparison to the standards contained in 9VAC5-30-80 shall be reported based on actual ambient air volume measured at the actual ambient temperature and pressure at the monitoring site during the measurement period.

9VAC5-30-30. Sulfur oxides (sulfur dioxide).

A. The primary ambient air quality standards are as follows:

1. The annual ambient air quality standard is 80 micrograms per cubic meter (0.030 parts per million) -- annual arithmetic mean not to be exceeded in a calendar year. The annual arithmetic mean shall be rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm shall be rounded up).

2. The 24-hour ambient air quality standard is 365 micrograms per cubic meter (0.14 parts per million) -- maximum 24-hour concentration not to be exceeded more than once per calendar year. The 24-hour averages shall be determined from successive nonoverlapping 24-hour blocks starting at midnight each calendar day and shall be rounded to two decimal places (fractional parts equal to or greater than 0.005 ppm shall be rounded up).

3. The 1-hour annual ambient air quality standard is 75 parts per billion (ppb), measured in the ambient air as sulfur dioxide (SO2). The 1-hour primary standard is met when the three-year average of the annual (99th percentile) of the daily maximum 1-hour average concentrations is less than or equal to 75 ppb, as determined in accordance with Appendix T of 40 CFR Part 50.

4. The annual and 24-hour ambient air quality standards set forth in subdivisions 1 and 2 of this subsection shall no longer apply to an area one year after the effective date of designation of that area pursuant to § 107 of the federal Clean Air Act for the 1-hour annual ambient air quality standard set forth in subdivision 3 of this subsection.

B. The secondary ambient air quality standard is 1,300 micrograms per cubic meter (0.50 parts per million) -- maximum three-hour concentration not to be exceeded more than once per calendar year. The 3-hour averages shall be determined from successive nonoverlapping 3-hour blocks starting at midnight each calendar day and shall be rounded to one decimal place (fractional parts equal to or greater than 0.05 ppm shall be rounded up).

C. Sulfur dioxide shall be measured by the reference method described in Appendix A, A-1 or A-2 of 40 CFR Part 50, or other method designated as such, or by an equivalent method.

D. To demonstrate attainment of the annual and 24-hour primary standard standards set forth in subdivisions A 1 and 2 of this section, the annual arithmetic mean and the second-highest 24-hour averages must be based upon hourly data that are at least 75% complete in each calendar quarter. A 24-hour block average shall be considered valid if at least 75% of the hourly averages for the 24-hour period are available. In the event that only 18, 19, 20, 21, 22, or 23 hourly averages are available, the 24-hour block average shall be computed as the sum of the available hourly averages using 18, 19, and so on as the divisor. If fewer than 18 hourly averages are available, but the 24-hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the rounding rule of subdivision A 2 of this section, then this shall be considered a valid 24-hour average. In this case, the 24-hour block average shall be computed as the sum of the available hourly averages divided by 24. Data used for demonstrating attainment of the 1-hour annual primary standard set forth in subdivision A 3 of this section shall meet the requirements of Appendix T of 40 CFR Part 50.

E. To demonstrate attainment of the secondary standard, the second-highest 3-hour average must be based upon hourly data that are at least 75% complete in each calendar quarter. A 3-hour block average shall be considered valid only if all three hourly averages for the 3-hour period are available. If only one or two hourly averages are available, but the 3-hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the rounding rule of subsection B of this section, then this shall be considered a valid 3-hour average. In all cases, the 3-hour block average shall be computed as the sum of the hourly averages divided by three.

9VAC5-30-40. Carbon monoxide.

A. The primary ambient air quality standards are as follows:

1. Nine parts per million (10 milligrams per cubic meter) -- average eight-hour concentration not to be exceeded more than once per year.

2. 35 parts per million (40 milligrams per cubic meter) -- average one-hour concentration not to be exceeded more than once per year.

B. Carbon monoxide shall be measured by the reference method described in Appendix C of 40 CFR Part 50, or other method designated as such, or by an equivalent method.

C. An 8-hour average shall be considered valid if at least 75 percent of the hourly average for the 8-hour period are available. In the event that only six (or seven) hourly averages are available, the 8-hour average shall be computed on the basis of the hours available using six (or seven) as the divisor.

D. When summarizing data for comparison with the standards, averages shall be stated to one decimal place. Comparison of the data with the levels of the standards in parts per million shall be made in terms of integers with fractional parts of 0.5 or greater rounding up.

9VAC5-30-50. Ozone (1-hour).

A. The primary and secondary ambient air quality standard is 0.12 parts per million (235 micrograms per cubic meter).

B. Ozone shall be measured by the reference method described in Appendix D of 40 CFR Part 50, other method designated as such, or by an equivalent method.

C. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 parts per million (235 micrograms per cubic meter) is equal to or less than one, as determined by Appendix H of 40 CFR Part 50.

D. The 1-hour ozone ambient air quality standard set forth in subsection A of this section shall no longer apply to an area after June 15, 2005.

9VAC5-30-55. Ozone (8-hour, 0.08ppm).

A. The primary and secondary ambient air quality standard is 0.08 parts per million, daily maximum 8-hour average.

B. Ozone shall be measured by the reference method described in Appendix D of 40 CFR Part 50, other method designated as such, or by an equivalent method.

C. The 8-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm, as determined in accordance with Appendix I to 40 CFR Part 50.

D. The standard set forth in subsection A of this section shall no longer apply after April 6, 2015. Area designations and classifications with respect to the revoked standard set forth in subsection A of this section are set forth in 9VAC5-20-204.A.2.

9VAC5-30-56. Ozone (8-hour, 0.075 ppm).

A. The primary and secondary ambient air quality standard is 0.075 parts per million, daily maximum 8-hour average.

B. Ozone shall be measured by the reference method described in Appendix D of 40 CFR Part 50, other method designated as such, or by an equivalent method.

C. The 8-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the three-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.075 ppm, as determined in accordance with Appendix P to 40 CFR Part 50.

9VAC5-30-60. Particulate matter (PM10).

A. 1. The primary and secondary 24-hour ambient air quality standard is 150 micrograms per cubic meter -- 24-hour average concentration.

2. The standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter, as determined in accordance with Appendix K of 40 CFR Part 50, is equal to or less than one.

B. Reserved.

C. For the purpose of determining attainment of the primary and secondary standards, particulate matter shall be measured in the ambient air as PM_{10} (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) by ~~the~~ a reference method ~~described in~~ based on Appendix J of 40 CFR Part 50, or other method designated as such, or by an equivalent method.

9VAC5-30-65. Particulate matter ($PM_{2.5}$).

A. The primary and secondary ambient air quality standards for particulate matter are:

1. 15.0 micrograms per cubic meter -- annual arithmetic mean concentration.

2. 65 micrograms per cubic meter -- 24-hour average concentration.

B. Particulate matter shall be measured in the ambient air as $PM_{2.5}$ (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers) by the reference method based on Appendix L of 40 CFR Part 50, or other method designated as such, or by equivalent method.

C. The annual primary and secondary $PM_{2.5}$ standards are met when the annual arithmetic mean concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 15.0 micrograms per cubic meter.

D. The 24-hour primary and secondary $PM_{2.5}$ standards are met when the 98th percentile 24-hour concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 65 micrograms per cubic meter.

E. The $PM_{2.5}$ standards set forth in this section were established by EPA on July 18, 1997 (62 FR 38652) and became effective on September 8, 2004 by adoption by the board. The $PM_{2.5}$ standards set forth in this section shall continue to apply only for purposes of the following:

1. Control strategy implementation plan revisions, maintenance plans, and associated emissions budgets relative to the $PM_{2.5}$ standards in this section.

2. Designation of nonattainment areas and maintenance areas relative to the $PM_{2.5}$ standards in this section.

Nothing in this section shall prevent the redesignation of any nonattainment area to attainment at any time.

9VAC5-30-66. Particulate matter ($PM_{2.5}$).

A. The primary and secondary ambient air quality standards for particulate matter are:

1. 15.0 micrograms per cubic meter annual arithmetic mean concentration.

2. 35 micrograms per cubic meter, 24-hour average concentration measured in the ambient air as PM2.5 (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers).

B. Particulate matter shall be measured in the ambient air as PM2.5 (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers) by a reference method based on Appendix L of 40 CFR Part 50, or other method designated as such, or an equivalent method.

C. The annual primary and secondary PM2.5 standards are met when the annual arithmetic mean concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 15.0 micrograms per cubic meter.

D. The 24-hour primary and secondary PM2.5 standards are met when the 98th percentile 24-hour concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 35 micrograms per cubic meter.

E. The PM2.5 standards set forth in this section were established by EPA on October 17, 2006 (71 FR 61224) and shall become effective in the Commonwealth on (insert effective date of regulation). The PM2.5 standards set forth in this section] shall apply for purposes of the following:

1. Control strategy implementation plan revisions, maintenance plans, and associated emissions budgets relative to the PM2.5 standards in this section.

2. Designation of nonattainment areas and maintenance areas relative to the PM2.5 standards in this section.

3. Implementation of the new source review programs set forth in Part II (9 VAC 5-80-50 et seq.) of 9 VAC 5-80 (Permits for Stationary Sources).

Nothing in this section shall prevent the redesignation of any nonattainment area to attainment at any time.

9VAC5-30-67. Particulate matter ($PM_{2.5}$).

A. The primary ambient air quality standards for particulate matter are:

1. 12.0 micrograms per cubic meter, annual arithmetic mean concentration.

2. 35 micrograms per cubic meter, 24-hour average concentration.

B. The secondary ambient air quality standards for particulate matter are:

1. 15.0 micrograms per cubic meter annual arithmetic mean concentration.

2. 35 micrograms per cubic meter 24-hour average concentration.

C. Particulate matter shall be measured in the ambient air as $PM_{2.5}$ (particles with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers) by the reference method based on Appendix L of 40 CFR Part 50, or other method designated as such, or by equivalent method.

D. The annual primary $PM_{2.5}$ standard is met when the annual arithmetic mean concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 12.0 micrograms per cubic meter.

E. The annual secondary $PM_{2.5}$ standard is met when the annual arithmetic mean concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 15.0 micrograms per cubic meter.

F. The 24-hour primary and secondary $PM_{2.5}$ standards are met when the 98th percentile 24-hour concentration, as determined in accordance with Appendix N of 40 CFR Part 50, is less than or equal to 35 micrograms per cubic meter.

G. The $PM_{2.5}$ standards set forth in this section were established by EPA on January 15, 2013 (78 FR 3086), and became effective in the Commonwealth on March 13, 2013, by adoption by the board.

The $PM_{2.5}$ standards set forth in this section shall apply for purposes of the following:

1. Control strategy implementation plan revisions, maintenance plans, and associated emissions budgets relative to the $PM_{2.5}$ standards in this section.

2. Designation of nonattainment areas and maintenance areas relative to the $PM_{2.5}$ standards in this section.

3. Implementation of the new source review programs set forth in Part II (9VAC5-80-50 et seq.) of 9VAC5-80 (Permits for Stationary Sources).

Nothing in this section shall prevent the redesignation of any nonattainment area to attainment at any time.

9VAC5-30-70. Oxides of nitrogen with nitrogen dioxide as the indicator.

A. The primary annual ambient air quality standard is 53 parts per billion (ppb), annual average concentration, measured in the ambient air as nitrogen dioxide.

B. The primary 1-hour ambient air quality standard is 100 ppb, 1-hour average concentration, annual arithmetic mean concentration.

C. The secondary ambient air quality standard is 0.053 parts per million (ppm) (100 micrograms per cubic meter), annual arithmetic mean concentration.

D. The levels of the standards shall be measured by a reference method based on Appendix F of 40 CFR Part 50, or by a federal equivalent method (FEM) designated in accordance with 40 CFR Part 53.

E. The annual primary standard is met when the annual average concentration in a calendar year is less than or equal to 53 ppb, as determined in accordance with Appendix S of 40 CFR Part 50 for the annual standard.

F. The 1-hour primary standard is met when the three-year average of the annual 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb, as determined in accordance with Appendix S of 40 CFR Part 50 for the 1-hour standard.

G. The secondary standard is attained when the annual arithmetic mean concentration in a calendar year is less than or equal to 0.053 ppm, rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm must be rounded up). To demonstrate attainment, an annual mean shall be based upon hourly data that are at least 75% complete or upon data derived from manual methods that are at least 75% complete for the scheduled sampling days in each calendar quarter.

9VAC5-30-80. Lead.

A. The primary and secondary ambient air quality standard for lead and its compounds is 1.5 micrograms per cubic meter, maximum arithmetic mean averaged over a calendar quarter, measured as elemental lead by a reference method based on Appendix G of 40 CFR Part 50, or by an equivalent method.

B. The standards set forth in subsection A of this section shall remain applicable to all areas notwithstanding the ambient air quality standard in subsection C of this section. The lead standard set forth in subsection A of this section shall no longer apply to an area one year after the effective date of the designation of that area, pursuant to § 107 of the federal Clean Air Act, for the lead ambient air quality standard set forth in subsection C of this section.

C. The primary and secondary ambient air quality standard for lead and its compounds is 0.15 micrograms per cubic meter, maximum arithmetic mean averaged over a three-month period, measured as lead either by (i) a reference method based on Appendix G of 40 CFR Part 50 and designated in accordance with 40 CFR Part 53; or (ii) an equivalent method designated in accordance with 40 CFR Part 53. The primary and secondary ambient air quality standards for lead are met when the maximum arithmetic three-month mean concentration for a three-year period, as determined in accordance with Appendix R of 40 CFR Part 50, is less than or equal to 0.15 micrograms per cubic meter.