TITLE 45
LEGISLATIVE RULE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY

SERIES 8
AMBIENT AIR QUALITY STANDARDS

§45-8-1. General.

1.1. Scope. -- This rule establishes ambient air quality standards in West Virginia for sulfur oxides, particulate matter, carbon monoxide, ozone, nitrogen dioxide and lead, equivalent to the national primary and secondary ambient air quality standards established under Section 109 of the Clean Air Act, and promulgated by the United States Environmental Protection Agency under 40 CFR Part 50. National primary ambient air quality standards define levels of air quality which the Administrator judges are necessary, with an adequate margin of safety, to protect the public health. National secondary ambient air quality standards define levels of air quality which the Administrator judges necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Such standards are subject to revision, and additional primary and secondary standards may be promulgated as the Administrator deems necessary to protect the public health and welfare.

1.2. Authority. -- W.Va. Code §22-5-4.

1.3. Filing Date. -- May 8, 2009.

1.4. Effective Date. -- June 1, 2009.

1.5. Former Rules. -- This legislative rule amends 45CSR8 - "Ambient Air Quality Standards" which was filed on April 23, 2008 and became effective on June 1, 2008.

§45-8-2. Anti-Degradation Policy.

2.1. Pursuant to the best interests of the State of West Virginia, it is the objective of the Secretary to obtain and maintain the cleanest air possible, consistent with the best available technology.

2.2. Where the present ambient air is of better quality than the established standards, the Secretary will develop long-range plans to protect the difference between the present quality and the established standards. The plans will be based upon the best available forecasts of probable land and air uses in these areas of high air quality.

2.3. The air quality of these areas will not be lowered unless it has been clearly demonstrated to the Secretary that such a change is justifiable as a result of necessary economic or social development and will not result in statutory air pollution. This will require that any industrial, public, or private project or development which could constitute a new source of air pollutants, within an area of such high air quality, provide the best practicable control available under existing technology as part of the initial project or development.

2.4. The promulgation of primary and secondary ambient air quality standards shall not be considered in any manner to allow significant deterioration of existing air quality in any portion of West Virginia.

§45-8-3. Definitions.

3.1. "Administrator" means the Administrator of the United States Environmental Protection Agency or his or her authorized representative.

3.2. "Air Pollutants" means solids, liquids, or gases which, if discharged into the air, may result in a statutory air pollution.

3.3. "Air Pollution" or 'statutory air pollution', shall have the meaning ascribed to it in W.Va. Code §22-5-2.

3.4. "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.

3.5. "Ambient Air Quality Standards" means the numerical expression of a specified concentration level for a particular air pollutant in the ambient air and the time averaging interval over which that concentration level is measured.

3.6. "Clean Air Act" or "CAA" means the federal Clean Air Act, as amended, 42 U.S.C. §7401 et seq.

3.7. "Equivalent method" means a method of sampling and analyzing the ambient air for an air pollutant that has been designated as an equivalent method in accordance with 40 CFR Part 53; it does not include a method for which an equivalent method designation has been cancelled in accordance with 40 CFR §53.11 or 40 CFR §53.16.

3.8. "Ozone" means the triatomic oxygen molecule (O_3), a very reactive form of oxygen.

3.9. "Particulate Matter" means any material, except uncombined water, that exists in a finely divided form as a liquid or solid.

3.10. "Person" means any and all persons, natural or artificial, including the state of West Virginia or any other state, the United States of America, any municipal, statutory, public or private corporation organized or existing under the laws of this or any other state or country, and any firm, partnership or association of whatever nature.

3.11. "$PM_{2.5}$" means particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

3.12. "PM_{10}" means particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

3.13. "Reference method" means a method of sampling and analyzing the ambient air for an air pollutant that is specified as a reference method in an appendix to this part, or a method that has been designated as a reference method in accordance with 40 CFR Part 53; it does not include a method for which a reference method designation has been cancelled in accordance with 40 CFR §53.11 or 40 CFR §53.16.

3.14. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§22-1-6 or 22-1-8.

3.15. Other words and phrases used in this rule, unless otherwise indicated, shall have the meaning ascribed to them in W.Va. Code §22-5-1 et seq. and 40 CFR §50.1. Words and phrases not defined therein shall have the meaning given to them in the federal Clean Air Act.

§45-8-4. Ambient Air Quality Standards.

4.1. Standards for Sulfur Oxides. -- No person shall allow emissions of sulfur oxides to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary and secondary ambient air quality standards:

4.1.a. Annual Arithmetic Mean Concentration. -- The level of the annual primary standard for sulfur oxides is 0.030 parts per million (ppm) and 80 micrograms per cubic meter ($\mu g/m^3$), 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).

4.1.b. Maximum 24-Hour Concentration. -- The level of the 24-hour primary standard for sulfur oxides is 0.14 ppm (365 $\mu g/m^3$), not to be exceeded more than once per calendar year. The 24-hour averages shall be determined from successive non-overlapping 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).

4.1.c. To demonstrate attainment with the sulfur oxides primary standards in subdivisions 4.1.a and 4.1.b, the annual arithmetic mean and the second-highest 24-hour averages must be based upon hourly data that are at least 75 percent complete in each calendar quarter. A 24-hour block average shall be considered valid if at least 75 percent 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, etc. 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 in subdivision 4.1.b, 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.

4.1.d. Maximum Three (3) Hour Concentration. -- The level of the 3-hour secondary standard for sulfur oxides is 0.5 ppm, (1300 $\mu g/m^3$), not to be exceeded more than once per year. The 3-hour averages shall be determined from successive non-overlapping 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).

4.1.e. To demonstrate attainment with the sulfur oxides secondary standard in subdivision 4.1.d, the second-highest 3-hour average must be based upon hourly data that are at least 75 percent 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 in subdivision 4.1.d, 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.

4.2. Standards for Particulate Matter. -- No person shall allow emissions of particulate matter to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary and secondary ambient air quality standards:

4.2.a. PM_{10} Maximum 24-Hour Average Concentration. -- The level of the primary and secondary 24-hour standards for PM_{10} is 150 $\mu g/m^3$. The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$, as determined in accordance with Appendix K of 40 CFR Part 50, is less than or equal to one.

4.2.b. $PM_{2.5}$ Maximum Annual Arithmetic Mean Concentration. -- The level of the annual primary and secondary standards for $PM_{2.5}$ are 15.0 $\mu g/m^3$. The 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 $\mu g/m^3$.

4.2.c. $PM_{2.5}$ Maximum 24-Hour Average Concentration. -- The level of the 24-hour primary and secondary standards for $PM_{2.5}$ are 35 $\mu g/m^3$. The 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 $\mu g/m^3$.

4.3. Standards for Carbon Monoxide. -- No person shall allow emissions of carbon monoxide to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary ambient air quality standards:

4.3.a. Maximum Eight (8) Hour Average Concentration. -- The level of the primary 8-hour standard for carbon monoxide is 9 ppm and 10 mg/m^3, not to be exceeded more than once per year. 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.

4.3.b. Carbon Monoxide Maximum One (1) Hour Average concentration. -- The level of the primary 1-hour standard for carbon monoxide is 35 ppm (40 mg/m^3), not to be exceeded more than once per year.

4.3.c. When summarizing data for comparison with the primary carbon monoxide standards under subdivisions 4.3.a and 4.3.b, 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.

4.4. Standards for Ozone. -- No person shall allow emissions of ozone to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary and secondary ambient air quality standards:

4.4.a. Eight-Hour Primary and Secondary Standards. -- The level of the eight (8) hour primary and secondary ambient air quality standards for ozone is 0.075 ppm, daily maximum 8-hour average.

4.4.b. 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 0.075 ppm, as determined in accordance with Appendix P to 40 CFR Part 50.

4.5. Standards for Nitrogen Dioxide. -- No person shall allow emissions of nitrogen dioxide to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary and secondary ambient air quality standards:

4.5.a. Maximum Annual Arithmetic Mean Concentration. -- The level of the annual primary and secondary standards for nitrogen dioxide is 0.053 ppm and 100 μg/m^3.

4.5.b. The annual primary and secondary standards for nitrogen dioxide under subdivision 4.5.a are 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 must be based upon hourly data that are at least 75 percent complete or upon data derived from manual methods that are at least 75 percent complete for the scheduled sampling days in each calendar quarter.

4.6. Standards for Lead. -- No person shall allow emissions of lead and its compounds, measured as elemental lead, to the ambient air in any manner which causes or significantly contributes to an exceedance of the following primary and secondary ambient air quality standards:

4.6.a. Maximum Arithmetic Mean Concentration. -- The level of the primary and secondary ambient air quality standards for lead and its compounds is 1.5 μg/m^3, averaged over a calendar quarter.

4.6.b. The primary and secondary ambient air quality standards for lead and its compounds under subsection 4.6.a shall be measured as elemental lead by a reference method based on Appendix G of 40 CFR Part 50, or by an equivalent method.

§45-8-5. Methods of Measurement.

5.1. For the purpose of determining attainment of the primary and secondary PM_{10} standards under subdivision 4.2.a, particulate matter shall be measured in the ambient air as PM_{10} by:

5.1.a. A reference method based on Appendix J of 40 CFR Part 50 and designated in accordance with 40 CFR Part 53; or

5.1.b. An equivalent method designated in accordance with 40 CFR Part 53.

5.2. For the purpose of determining attainment of the primary and secondary sulfur oxides standards under subsection 4.1, sulfur oxides shall be measured in the ambient air as sulfur dioxide by:

5.2.a. The reference method described in Appendix A of 40 CFR Part 50 ; or

5.2.b. An equivalent method designated in accordance with 40 CFR Part 53.

5.3. For the purpose of determining attainment of the primary and secondary $PM_{2.5}$ standards under subdivisions 4.2.b and 4.2.c, particulate matter shall be measured in the ambient air as $PM_{2.5}$ by:

5.3.a. A reference method based on Appendix L of 40 CFR Part 50 and designated in accordance with 40 CFR Part 53; or

5.3.b. An equivalent method designated in accordance with 40 CFR Part 53.

5.4. For the purpose of determining attainment of the primary carbon monoxide standards under subsection 4.3, carbon monoxide concentrations shall be measured in the ambient air by:

5.4.a. A reference method based on Appendix C of 40 CFR Part 50 and designated in accordance with 40 CFR Part 53; or

5.4.b. An equivalent method designated in accordance with 40 CFR Part 53.

5.5. For the purpose of determining attainment of the primary and secondary ozone standards under subsection 4.4, ozone concentrations shall be measured in the ambient air by a reference method based on Appendix D to 40 CFR Part 50 and designated in accordance with 40 CFR Part 53.

5.6. For the purpose of determining attainment of the primary and secondary nitrogen dioxide standards under subsection 4.5, nitrogen dioxide concentrations shall be measured in the ambient air by:

5.6.a. A reference method based on Appendix F of 40 CFR Part 50 and designated in accordance with 40 CFR Part 53; or

5.6.b. An equivalent method designated in accordance with 40 CFR Part 53.

5.7. For the purpose of determining attainment of the primary and secondary lead standards under subsection 4.6, lead concentrations shall be measured as elemental lead in the ambient air by:

5.7.a. A reference method based on Appendix G of 40 CFR Part 50; or

5.7.b. An equivalent method.

§45-8-6. Reference Conditions.

6.1. All measurements of air quality that are expressed as mass per unit volume (e.g., micrograms per cubic meter) other than for the $PM_{2.5}$ standards contained in subdivisions 4.2.b and 4.2.c shall be corrected to a reference temperature of $25^{O}C$ and a reference pressure of 760 millimeters of mercury (1013.2 millibars). Measurements of $PM_{2.5}$ for purposes of comparison to the standards contained in subdivisions 4.2.b and 4.2.c 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.

§45-8-7. Inconsistency Between Rules.

7.1. In the event of any inconsistency between this rule and any other rule of the West Virginia Department of Environmental Protection, the inconsistency shall be resolved by the determination of the Secretary and the determination shall be based upon the application of the more stringent provision, term, condition, method, or rule.