



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

OFFICE OF THE
SECRETARY

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Secretary's Order No.: 2013-A-0040

**RE: Approving Final Regulations to 7 DE Admin. Code 1103
 (Ambient Air Quality Standards)
 (pursuant to E.O. 36 DNREC Regulatory Review)**

Date of Issuance: November 15, 2013

Effective Date of the Amendment: January 11, 2014

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") the following findings, reasons and conclusions are entered as an Order of the Secretary in the above-referenced rulemaking proceeding.

Background and Procedural History

This Order considers proposed *revised* regulations to amend 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*), as a result of the Department's exhaustive review of its existing regulations, pursuant to Governor Markell's Executive Order No. 36 (hereinafter referred to as "E.O. 36"). In June of 2012, Governor Markell issued E.O. 36, which directed all state agencies, including DNREC, to perform a focused review of their existing, older regulations, identify and remove regulatory hurdles, and modernize and streamline any regulations that may be outdated or unnecessarily burdensome, while

Delaware's Good Nature depends on you!

maintaining the state's commitment to improving public health and environmental performance.

Among the considerations of the Department's aforementioned focused review of its existing regulations under E.O. 36 was to ensure that the same continued to serve the original purpose for which they were adopted, and to provide for improvements. To that end, the Department's Division of Air Quality ("DAQ") identified 7 DE Admin. Code 1103, *Ambient Air Quality Standards*, as an existing, older regulation which required revision at this time.

Revisions are being proposed at this time to 7 DE Admin. Code 1103, *Ambient Air Quality Standards*, in order to bring the existing regulatory standards up-to-date with current federal requirements. This particular air regulation currently contains outdated test methods and emissions standards. This requires citizens and industry to review both state regulations and federal regulations, and to reconcile the two, in order to understand the requirements that apply here in Delaware. This could also lead to state and federal requirements being incorrectly applied. This unnecessary regulatory burden will be eliminated with the Department's proposed revisions to 7 DE Admin. Code 1103. Additionally, the revised regulation will also be submitted to the U.S. Environmental Protection Agency ("EPA") as a revision to Delaware's State Implementation Plan ("SIP").

The Department's Division of Air Quality commenced the regulatory development process with Start Action Notice 2013-16 (E.O.36). The Department published its initial proposed regulation Amendments in the July 1, 2013 *Delaware Register of Regulations*, and held a public hearing on August 1, 2013.

The proposed Amendments were thoroughly vetted by the Department at the aforementioned public hearing on August 1, 2013. Public comment was received by the Department from the regulated community with regard to these proposed amendments, suggesting several edits to the proposed language, which would both correct some typographical errors and provide additional clarity without changing the intent of the proposed amendment. After review, the Department's Division of Air Quality agreed with these suggested revisions, and has now incorporated the same into the proposed *revised* amendments to 7 DE Admin. Code 1103. None of the proposed revisions are substantive in nature, and thus no additional vetting of this proposed promulgation is necessary at this time. It should also be noted that all proper notification and noticing requirements concerning this proposed promulgation were met by the Department. Proper notice of the hearing was provided as required by law.

The Department's presiding hearing officer, Lisa A. Vest, prepared a Hearing Officer's Report dated November 4, 2013 (Report). The Report recommends certain findings and the adoption of the proposed *revised* Amendments as attached to the Report as Appendix A.

Findings and Discussion

I find that the proposed *revised* Amendments are well-supported by the record developed by the Department, and I adopt the Report to the extent it is consistent with this Order. The adoption of this Order will enable Delaware to update its existing, older air regulations by bringing the regulatory standards up-to-date with current federal requirements and provide additional clarity to both the regulated community and the public at large with respect to these issues.

Moreover, the *revised* amendments to 7 DE Admin. Code 1103 will also be submitted to the EPA as a revision to update Delaware's State Implementation Plan.

In conclusion, the following findings and conclusions are entered:

1.) The Department has jurisdiction under its statutory authority to issue an Order adopting these proposed Amendments as final;

2.) The Department provided adequate public notice of the proposed Amendments, and provided the public with an adequate opportunity to comment on the initial proposed Amendments, including at the public hearing held on August 1, 2013;

3.) The Department held a public hearing on August 1, 2013 in order to consider public comment before making any final decision;

4.) The Department's Hearing Officer's Report, including its recommended record and the recommended *revised* Amendments as set forth in Appendix A, are adopted to provide additional reasons and findings for this Order;

5.) The adoption of this Order will enable Delaware to update its existing, older regulations by bringing the regulatory standards up-to-date with current federal requirements and provide additional clarity to both the regulated community and the public at large with respect to these issues. Moreover, the revisions to 7 DE Admin. Code 1103 will also be submitted to the EPA as a revision to update Delaware's State Implementation Plan;

6.) The recommended *revised* Amendments should be adopted as final regulation Amendments because Delaware will be able to (1) update its existing, older air regulations (as well as its SIP), and provide additional clarity and understanding to Delaware citizens with regard to these matters; (2) further the purpose of Governor

Markell's initiatives as set forth in Executive Order No. 36, to wit: strengthen Delaware's economy by modernizing and streamlining regulations that may be outdated or unnecessarily burdensome, while maintaining the state's commitment to improving public health and environmental performance; and, lastly, because (3) the amendments are well supported by documents in the record;

7.) The Department shall submit this Order approving the final regulation to the *Delaware Register of Regulations* for publication in its next available issue, and provide such other notice as the law and regulation require and the Department determines is appropriate.



Collin P. O'Mara
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable Collin P. O'Mara
Cabinet Secretary, Department of Natural Resources and Environmental Control

FROM: Lisa A. Vest 
Public Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: **Proposed Regulation Amendments to 7 DE Admin. Code 1103**
(Ambient Air Quality Standards)
(pursuant to E.O. 36 DNREC Regulatory Review)

DATE: November 4, 2013

I. BACKGROUND AND PROCEDURAL HISTORY:

A public hearing was held on Thursday, August 1, 2013, at 6:00 p.m. at the Department of Natural Resources and Environmental Control (“DNREC”, “Department”), 89 Kings Highway, Dover, Delaware to receive comment on proposed amendments (“amendments”) to 7 DE Admin. Code 1103 (*Ambient Air Standards*). This public hearing was held as a result of the Department’s review of its existing regulations, pursuant to Governor Markell’s Executive Order No. 36 (hereinafter referred to as “E.O. 36”). In June of 2012, Governor Markell issued E.O. 36, which directed all state agencies, including DNREC, to perform a focused review of their existing, older regulations, identify and remove regulatory hurdles, and modernize and streamline any regulations that may be outdated or unnecessarily burdensome, while maintaining the state’s commitment to improving public health and environmental performance.

Among the considerations of the Department’s aforementioned focused review of its existing regulations under E.O. 36 was to ensure that the same continued to serve the original purpose for which they were adopted, and to provide for improvements. To that end, the

Department's Division of Air Quality ("DAQ") identified 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*) as an existing, older regulation which required revision at this time.

Revisions are being proposed at this time to 7 DE Admin. Code 1103, (*Ambient Air Quality Standards*), in order to bring the existing regulatory standards up-to-date with current federal requirements. This particular air regulation currently contains outdated test methods and emissions standards. This requires citizens and industry to review both state regulations and federal regulations, and to reconcile the two, in order to understand the requirements that apply here in Delaware. This could also lead to state and federal requirements being incorrectly applied. This unnecessary regulatory burden will be eliminated with the Department's proposed revisions to 7 DE Admin. Code 1103. Additionally, the revised regulation will also be submitted to the U.S. Environmental Protection Agency ("EPA") as a revision to Delaware's State Implementation Plan ("SIP").

The Department has the statutory basis and legal authority to act with regard to the proposed amendments to 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*), pursuant to 7 *Del. C.*, Chapter 60. The Department's Division of Air Quality commenced the regulatory development process with Start Action Notices 2013-14 (E.O.36). The Department published its initial proposed regulation Amendments in the July 1, 2013 *Delaware Register of Regulations*, and held the public hearing on August 1, 2013. Comment was received by the Department regarding this matter, and the same will be addressed below. Proper notice of the hearing was provided as required by law.

II. SUMMARY OF THE PUBLIC HEARING RECORD:

The public hearing record consists of the following documents: (1) a verbatim transcript; and (2) six documents introduced at the public hearing held on August 1, 2013, and marked by

this Hearing Officer accordingly as Department Exhibits 1-6. The Department's person primarily responsible for the drafting and overall promulgation of these proposed amendments, Ron Amirikian, developed the record with the relevant documents in the Department's files.

Following the submission of the Department's exhibits into the record at the hearing held on August 1, 2013, Mr. Amirikian proceeded to offer a brief summary as to the Department's proposed actions for the benefit of the record developed in this matter (see Section I of this Report for said summary). Public comment was received by the Department from the regulated community with regard to these proposed amendments, suggesting several edits to the proposed language, which would both correct some typographical errors and provide additional clarity without changing the intent of the proposed amendment. After review, the Department's Division of Air Quality agreed with these suggested revisions, and has now incorporated the same into the proposed *revised* amendments to 7 DE Admin. Code 1103. None of the proposed revisions are substantive in nature, and thus no additional vetting of this proposed promulgation is necessary at this time.

For the Secretary's review, and in order for the Secretary to gain a thorough understanding of this proposed promulgation, copies of the above-referenced proposed *revised* amendments are attached hereto as Appendix "A", and the same are expressly incorporated into this Hearing Officer's Report. It should be noted that the Department adhered to all appropriate Delaware statutes and the regulatory development process in this matter, and that the Department has met the required public notice obligations regarding these proposed amendments. It should also be noted that the Department has reviewed this proposed promulgation in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally.

III. RECOMMENDED FINDINGS AND CONCLUSIONS:

Based on the record developed, I find and conclude that the Department has provided appropriate reasoning regarding the need for the proposed *revised* amendments to 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*), as noted above. Accordingly, I recommend promulgation of these proposed *revised* amendments in the customary manner provided by law.

Further, I recommend the Secretary adopt the following findings and conclusions:

1. Proper notice of the hearing was provided as required by law.
2. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;
3. The Department provided adequate public notice of all proceedings in a manner required by the law and regulations;
4. The Department held its public hearing in a manner required by the law and regulations;
5. Promulgation of the proposed *revised* regulatory amendments to 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*) will enable Delaware to update this existing, older air regulation by bringing the regulatory standards up-to-date with current federal requirements and provide additional clarity to both the regulated community and the public at large with respect to these issues. Moreover, said proposed *revised* amendments to 7 DE Admin. Code 1103 will also be submitted to the EPA as a revision to update Delaware's State Implementation Plan;
6. Additionally, promulgation of this proposed *revised* regulatory amendments by the Department will further the purpose of Governor Markell's initiatives as set forth in Executive Order No. 36, to wit: to strengthen Delaware's economy by modernizing

- and streamlining regulations that may be outdated or unnecessarily burdensome, while maintaining the state's commitment to improving public health and environmental performance;
7. The Department has reviewed these proposed *revised* regulatory amendments in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally;
 8. The Department's aforementioned proposed *revised* regulatory amendments to 7 DE Admin. Code 1103 (*Ambient Air Quality Standards*), as published in the July 1, 2013 *Delaware Register of Regulations* and as set forth in Appendix "A" hereto, are adequately supported, are not arbitrary or capricious, and are consistent with the applicable laws and regulations. Consequently, they should be approved as final regulatory amendments, which shall go into effect ten days after their publication in the next available issue of the *Delaware Register of Regulations*; and
 9. The Department shall submit the proposed *revised* regulation amendments as final amendments to the *Delaware Register of Regulations* for publication in its next available issue, and shall provide such other notice as the law and regulations require, and as the Department determines is appropriate.



LISA A. VEST
Public Hearing Officer

APPENDIX "A"

Title 7 Natural Resources and Environmental Control

1100 Air Quality Management Section

7 DE Admin. Code 1103 Ambient Air Quality Standards

~~09/11/99~~*Insert Revision Effective Date*

1.0 General Provisions

- 1.1 Air quality standards are required to assure that ambient air quality shall be consistent with established criteria and shall serve to effectively and reasonably manage the air resources of the State of Delaware.
 - 1.1.1 Primary air quality standards provide public health protection, including protecting the health of sensitive populations such as asthmatics, children, and the elderly.
 - 1.1.2 Secondary air quality standards provide public welfare protection, including protection against decreased visibility and damage to crops, animals, vegetation, and buildings.
- 1.2 At such time as additional pertinent information becomes available with respect to applicable air quality criteria, recommendations shall be incorporated and the air quality standards shall be subject to revisions.
- 1.3 The absence of a specific ambient air quality standard shall not preclude actions by the Department to control contaminants to assure protection, safety, welfare, and comfort of the people of the State of Delaware.
- 1.4 Air quality standards are defined by frequency distribution presentations and arithmetic averages. The characteristic parameters describing the frequency distribution are the geometric mean and 99th percentile.
 - 1.4.1 The geometric mean is defined as the Nth root of the product of N numbers. Assuming a log-normal cumulative frequency distribution, the 50th percentile value will be equal to the geometric mean.
 - 1.4.2 The arithmetic average mean is defined as the sum of a set of values divided by the number of values.

- 1.4.3 The 99th percentile for a group of numbers is defined as that value which is exceeded by one percent of the numbers.
- 1.5 The ambient air quality values stated herein shall apply to all areas outside a source property line.
- 1.6 The sampling and analytical procedures and techniques employed to determine ambient air concentrations of contaminants shall be consistent with methods which result in a representative evaluation of the prevailing conditions. The following methods shall be used directly or employed as reference standards against which other methods may be calibrated;
- 1.6.1 Ambient concentrations of total suspended particulates shall be determined by the reference high volume method in accordance with 40 CFR, Part 50, ~~Appendix B, June 29, 1979.~~Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method), April 22, 1983.
- 1.6.2 Ambient concentrations of sulfur dioxide shall be determined by the reference or equivalent method in accordance with 40 CFR, Part 50, ~~Appendix A-1, June 29, 1979.~~Reference Method Principle and Calibration Procedure for the Measurement of Sulfur Dioxide in the Atmosphere (Ultraviolet Fluorescence Method), June 22, 2010, or 40 CFR, Part 50, Appendix A-2, Reference Method for the Measurement of Sulfur Dioxide in the Atmosphere (Pararosaniline Method), June 22, 2010.
- 1.6.3 Ambient concentrations of carbon monoxide shall be determined by the reference method in accordance with 40 CFR, Part 50, Appendix C, ~~June 29, 1979.~~Measurement Principle and Calibration Procedure for the Measurement of Carbon[**e**] Monoxide in the Atmosphere (Non-Dispersive Infrared Photometry, August 31, 2011.
- 1.6.4 Ambient concentrations of ozone corrected for interferences due to nitrogen oxides and sulfur dioxide shall be determined by the reference method in accordance with 40 CFR, Part 50, Appendix D, ~~June 29, 1979.~~Measurement Principle and Calibration Procedure for the Measurement of Ozone in the Atmosphere, July 18, 1997.

- 1.6.5 Ambient concentrations of methane and non-methane hydrocarbons shall be determined by the reference method in accordance with 40 CFR, Part 50, Appendix E, June 29, 1979.
- 1.6.6 Ambient concentrations of nitrogen dioxide shall be determined by the reference method in accordance with 40 CFR, Part 50, Appendix F, ~~June 29, 1979.~~ Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase Chemiluminescence), January 20, 1983.
- 1.6.7 Ambient concentrations of hydrogen sulfide shall be determined by gas chromatographic separation - flame photometric detection.
- 1.6.8 Ambient concentrations of lead shall be determined by the reference method in accordance with 40 CFR, Part 50, Appendix G, ~~June 29, 1979.~~ Reference Method for the Determination of Lead in [Total] Suspended Particulate Matter[, August 2, 2013] [~~Collected from Ambient Air, November 12, 2008~~].
- 1.6.9 Ambient concentrations of PM₁₀ particulate shall be determined by a reference method in accordance with 40 CFR, Part 50, Appendix J, Reference Method for the Determination of Particulate Matter as PM₁₀ in the Atmosphere, August 7, 1987, or an equivalent method.
- 1.6.10 Ambient concentrations of PM_{2.5} particulate shall be determined by the reference method based on 40 CFR, Part 50, Appendix L, ~~as found in the Federal Register dated July 18, 1997, on page 38714 — 38752.~~ Reference Method for the Determination of Fine Particulate Matter as PM_{2.5} in the Atmosphere, October 17, 2006.
- 1.7 Air quality standards are expressed in metric units with the approximate equivalent volumetric units in parentheses. The standard conditions for air ambient monitoring is 760 mm. Hg and 25°C. The formula to convert metric units to parts per million (ppm) is:

$$\text{ppm(vol)} = \frac{\mu\text{g}/\text{m}^3 \times 0.024465}{\text{MW}} \quad \text{or} \quad \frac{\text{mg}/\text{m}^3 \times 24.465 \times 10^{-6}}{\text{MW}}$$

where MW is molecular weight of the contaminant being measured.

2.0 General Restrictions

No person shall cause the air quality standards specified in this Regulation to be exceeded.

02/01/1981

3.0 Suspended Particulates

3.1 The Primary Ambient Air Quality Standards for Particulate Matter are:

3.1.1 An annual geometric mean of 75 micrograms per cubic meter not to be exceeded, based upon 24 hour average concentrations.

3.1.2 A value of 260 micrograms per cubic meter not to be exceeded more than once per year, based upon 24 hour average concentrations.

3.2 The Secondary Ambient Air Quality Standards for Particulate Matter are:

3.2.1 An annual geometric mean of 60 micrograms per cubic meter as a guideline for achieving the secondary standard based upon 24 hour average concentrations.

3.2.2 A value of 150 micrograms per cubic meter not to be exceeded more than once per year, based upon 24 hour average concentrations.

~~02/01/1981~~ *Insert Revision Effective Date*

4.0 Sulfur Dioxide

~~4.1 The Primary Ambient Air Quality Standards for Sulfur Oxides measured as Sulfur Dioxide are as follows:~~

~~4.1.1 An annual arithmetic average value of 80 $\mu\text{g}/\text{m}^3$, (0.03 ppm) not to be exceeded, based upon 24 hour average concentrations. The national primary 1-hour air quality standard for oxides of sulfur is 75 parts per billion (ppb) measured in the ambient air as sulfur dioxide. The 1-hour ambient air quality standard is [met] when the three-[year][hour] average of the annual (99th percentile) of the daily maximum 1-hour average concentration is less than or equal to 75 ppb.~~

4.1.1. Compliance with the national primary 1-hour air quality standard is determined in accordance with 40 CFR Part 50 Appendix T, Interpretation of the Primary

National Ambient Air Quality Standards for Oxides of Sulfur (Sulfur Dioxide), June 23, 2010.

- 4.1.2. The national primary 1-hour air quality standard for oxides of sulfur is set forth in 40 CFR Part 50.17, National Primary Ambient Air Quality Standards for Sulfur Oxides (Sulfur Dioxide), June 22, 2010.
- 4.1.2 A twenty-four average value of $365 \mu\text{g}/\text{m}^3$ (0.14 ppm) not to be exceeded more than once per year based upon 24-hour average concentrations. The 24-hour primary national ambient air quality standard for oxides of sulfur is 0.14 parts per million (ppm), not to be exceeded more than once per calendar year.
- 4.2.1 Compliance with the national 24-hour primary ambient air quality standard for oxides of sulfur is determined in accordance with 40 CFR Part 50, Appendix A-1, Reference Method Principle and Calibration Procedure for the Measurement of Sulfur Dioxide in the Atmosphere (Ultraviolet Fluorescence Method), June 22, 2010, or 40 CFR, Part 50, Appendix A-2, Reference Method for the Measurement of Sulfur Dioxide in the Atmosphere (Pararosaniline Method), June 22, 2010.
- 4.2.2 The national primary 24-hour ambient air quality standard for sulfur oxides is set forth in 40 CFR Part 50.4, National Primary Ambient Air Quality Standards for Sulfur Oxides (Sulfur Dioxide), June 22, 2010.
- 4.3 The national primary annual ambient air quality standard for sulfur oxides of 0.030 parts per million (ppm), annual arithmetic mean, shall not be exceeded.
- 4.3.1 Compliance with the national annual primary ambient air quality standard for oxides of sulfur is determined in accordance with 40 CFR Part 50, Appendix A-1, Reference Method Principle and Calibration Procedure for the Measurement of Sulfur Dioxide in the Atmosphere (Ultraviolet Fluorescence Method), June 22, 2010, or 40 CFR, Part 50, Appendix A-2, Reference Method for the Measurement of Sulfur Dioxide in the Atmosphere (Pararosaniline Method), June 22, 2010.
- 4.3.2 The national primary ~~[annual]~~~~[24-hour]~~ ambient air quality standard for sulfur oxides is set forth in 40 CFR Part 50.4, National Primary Ambient Air Quality Standards for Sulfur Oxides (Sulfur Dioxide), June 22, 2010.
- 4.4 The national secondary 3-hour ambient air quality standard for sulfur oxides is 0.5 parts per million (ppm), not to be exceeded more than once per calendar year.

4.4.1 Compliance with the national secondary 3-hour ambient air quality standard for oxides of sulfur is determined in accordance with 40 CFR Part 50, Appendix A-1, Reference Method Principle and Calibration Procedure for the Measurement of Sulfur Dioxide in the Atmosphere (Ultraviolet Fluorescence Method), June 22, 2010, or 40 CFR, Part 50, Appendix A-2, Reference Method for the Measurement of Sulfur Dioxide in the Atmosphere (Pararosaniline Method), June 22, 2010.

4.4.2 The national secondary 3-hour ambient air quality standard for sulfur oxides is set forth in 40 CFR Part 50.5, National Secondary Ambient Air Quality Standard for Sulfur Oxides (Sulfur Dioxide), May 22, 1996.

~~4.2 The Secondary Ambient Air Quality Standards for Sulfur Oxides measured as Sulfur Dioxide are as follows:~~

~~4.2.1 A three-hour average value of 1300 micrograms per cubic meter (0.5 ppm), not to be exceeded more than once per year.~~

02/01/1981

5.0 Carbon Monoxide

5.1 The average concentration of carbon monoxide taken over any consecutive eight hours shall not exceed a value of 10 milligrams per cubic meter (9 ppm) more than once per year.

5.2 The average concentration of carbon monoxide taken over any one hour period shall not exceed 40 milligrams per cubic meter (35 ppm) more than once per year.

~~09/11/1999~~Insert Revision Effective Date

6.0 Ozone

6.1 ~~One-hour primary and secondary ambient air quality standards for ozone. The average number of days per calendar year with a maximum one-hour average value exceeding 235 $\mu\text{g}/\text{m}^3$ (0.12 ppm) shall be equal to or less than one, averaged over three consecutive years. The 1-hour primary and secondary [national] ambient air quality standard for ozone is 235 $\mu\text{g}/\text{m}^3$ (0.12 ppm). The primary and secondary ozone ambient air quality standards are met when the number of days per calendar year with maximum hourly average concentrations above 235 $\mu\text{g}/\text{m}^3$ (0.12 ppm)] is equal to or less than 1, as determined by 40 CFR Part 50, Appendix H, Interpretation of the 1-hour Primary and Secondary National Ambient Air Quality Standards for Ozone, July 18, 1997. The 1-hour primary and secondary national ambient air quality standards are set forth in 40 CFR~~

Part 50.9, National 1-hour Primary and Secondary Ambient Air Quality Standards for Ozone, May 14, 2012. ~~This standard shall be applicable to New Castle County and Kent County.~~

- 6.2 ~~Eight hour primary and secondary ambient air quality standards for ozone. The average of the fourth highest daily maximum eight hour average ozone concentration is less than or equal to 0.08 ppm, averaged over three consecutive years. The 8-hour primary and secondary [national] ambient air quality standard for ozone is 0.075 parts per million (ppm). The primary and secondary ozone ambient air quality standards are met when the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.075 ppb, as determined in accordance with 40 CFR Part 50, Appendix P, Interpretation of the Primary and Secondary Air quality Standards for Ozone, May 27, 2008. The 8-hour primary and secondary ozone standards are set forth in 40 CFR Part 50.15, National Primary and Secondary Air Standards for Ozone, May 27, 2008. This standard applies to all Counties in Delaware.~~

02/01/1981

7.0 Hydrocarbons

- 7.1 The hydrocarbons standard in 7.2 of this regulation is for use as a guide in devising implementation plans to achieve the ozone standard.
- 7.2 The average concentration of hydrocarbons, exclusive of methane, taken over a three hour period from 6 to 9 a.m., local time, shall not exceed 160 micrograms per cubic meter (0.24 ppm) more than once per year.

~~02/01/1981~~ *Insert Revision Effective Date*

8.0 Nitrogen Dioxide

~~The annual arithmetic mean concentration of nitrogen dioxide shall not exceed 100 micrograms per cubic meter (0.05 ppm).~~

- 8.1 The national primary and secondary air quality standards for oxides of nitrogen (nitrogen dioxide indicator) are as follows:
- 8.1.1 The primary 1-hour air quality standard for oxides of nitrogen is 100 parts per billion (ppb), 1-hour average concentration, measured in the ambient air as nitrogen dioxide. Compliance with the 1-hour standard is demonstrated when the

three-year average of the 98th percentile of the daily maximum 1-hour average concentration is less than or equal to 100 ppb, as determined with 40 CFR Part 50, Appendix S, Interpretation of the Primary Air Quality Standards for Oxides of Nitrogen (Nitrogen Dioxide), February 9, 2010.

8.1.2 The primary annual air quality standard for oxides of nitrogen is 53 parts per billion (ppb), annual average concentration, measured in the ambient air as nitrogen dioxide. The primary annual air quality standard is demonstrated when the average annual concentration in a calendar year is less than or equal to 53 ppb, as determined with 40 CFR Part 50, Appendix S, Interpretation of the Primary Air Quality Standards for Oxides of Nitrogen (Nitrogen Dioxide), February 9, 2010.

8.1.3 The secondary annual air quality standard for oxides of nitrogen is 53 parts per billion (ppb), annual arithmetic mean concentration, measured in the ambient air as nitrogen dioxide. The secondary ambient air quality standard is demonstrated when the annual arithmetic mean concentration in a calendar year is less than or equal to 0.053 ppm. 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.

8.2 The primary and secondary air quality standards for nitrogen dioxide are as set forth in 40 CFR Part 50.11, February 9, 2010.

02/01/1981

9.0 Hydrogen Sulfide

9.1 The average concentration of hydrogen sulfide taken over any consecutive three minutes shall not exceed 0.06 ppm.

9.2 The average concentration of hydrogen sulfide taken over any consecutive 60 minutes shall not exceed 0.03 ppm.

~~02/01/1981~~ *Insert Revision Effective Date*

10.0 Lead

~~The 24 hour concentration of lead averaged over a calendar quarter shall not exceed 1.5 micrograms per cubic meter.~~ The national primary and secondary ambient air quality standard for lead (Pb) and its compounds are 0.15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), arithmetic mean concentration over a 3-month period measured in the ambient air as Pb. The national primary and

secondary air quality standards are set forth in 40 CFR Part 50.16, National Primary and Secondary Ambient Air Quality Standards for Lead, November 12, 2008.

02/11/2003 Insert Revision Effective Date

11.0 PM₁₀ and PM_{2.5} Particulates

11.1 The Primary and Secondary Ambient Air Quality Standards for Particulate Matter, measured as PM₁₀ are:

11.1.1 The primary and secondary air quality standards for PM₁₀ are 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), 24 hour average concentration. The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$, as determined in accordance with 40 CFR, Part 50, Appendix K, Interpretation of the National Ambient Air Quality Standards for Particulate Matter, October 17, 2006, is equal to or less than one. The national primary and secondary air quality standards are set forth in 40 CFR Part 50.6, National Primary and Secondary Ambient Air Quality Standards for PM₁₀.

11.1.2 ~~50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), annual arithmetic mean. The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR, Part 50, Appendix K, is less than or equal to $50 \mu\text{g}/\text{m}^3$.~~ Reserved

11.2 The Primary and Secondary Ambient Air Quality Standards for Particulate Matter, measured as PM_{2.5} are:

11.2.1 The 24-hour primary and secondary air quality standard is 6535 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), 24-hour average concentration. The 24-hour primary and secondary P and secondary PM_{2.5} standards are met when the 98th percentile 24-hour concentration, as determined in accordance with 40 CFR, Part 50, Appendix N, as found in the Federal Register dated July 18, 1997, on page 38757 – 38758 Interpretation of the National Ambient Air Quality Standards for PM_{2.5}, January 15, 2013, is less than or equal to $6535 \mu\text{g}/\text{m}^3$. The national 24-hour hour primary and secondary air quality standards are set forth in 40 CFR Part 50.13, National Primary and Secondary Air Quality Standards for PM_{2.5}, October 17, 2006.

11.2.2 The primary annual air quality standard is 152.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annual arithmetic mean concentration. The annual primary and secondary PM_{2.5} standards are met when the annual arithmetic mean concentration, as

determined in accordance with 40 CFR, Part 50, Appendix N, as found in the Federal Register dated July 18, 1997, on page 38756–38757 Interpretation of the National Ambient Air Quality Standards for PM_{2.5}, January 15, 2013, is less than or equal to 152.0 µg/m³. The national annual primary and secondary air quality standards are set forth in 40 CFR Part 50.18, National Primary and Secondary Air Quality Standards for PM_{2.5}, January 15, 2013.

11.2.3 The secondary annual air quality standard is 15.0 micrograms per cubic meter (µg/m³) annual arithmetic mean concentration. The annual secondary PM_{2.5} standards are met when the annual arithmetic mean concentration, as determined in accordance with 40 CFR, Part 50, Appendix N, Interpretation of the National Ambient Air Quality Standards for PM_{2.5}, January 15, 2013, is less than or equal to 15.0 µg/m³. The national annual primary and secondary air quality standards are set forth in 40 CFR Part 50.13, National Primary and Secondary Air Quality Standards for PM_{2.5}, October 17, 2006.