ENVIRONMENTAL QUALITY BOARD
[25 PA CODE CHS. 121 and 139]
Measurement and Reporting of Condensable Particulate Matter Emissions

The Environmental Quality Board (Board) amends Chapters 121 and 139 (relating to general provisions; and sampling and testing) to read as set forth in Annex A. This final-form rulemaking amends Chapter 139 to update and clarify what sampling and testing methods are used to demonstrate compliance with certain particulate matter (PM) emission limitations. The amendment to § 139.12(a) (relating to emissions of particulate matter) explains the process used for determining compliance with filterable PM emission standards set forth in §§ 123.11—123.13 (relating to combustion units; incinerators; and processes). The amendments to §§ 139.12(b) and (c) explain the process used for determining compliance with filterable and condensable PM emission limitations. The amendment to § 139.12(d) explains the compliance demonstration process and clarifies that use of test methods and procedures that are not specified in the Source Testing Manual must be approved in writing by the Department. Subsection (e) adds a cross reference to § 139.5 (relating to revisions to the source testing manual and the continuous source monitoring manual). The amendment to § 139.53 (relating to filing monitoring reports) specifies where monitoring reports must be filed.

In addition to these substantive changes, the final-form rulemaking amends Chapter 121 to add two terms and definitions in § 121.1 (relating to definitions) – "condensable particulate matter" and "filterable particulate matter."

This order was adopted by the Board at its meeting of _____, 2013.

A. Effective Date

This final-form rulemaking is effective upon final-form publication in the *Pennsylvania Bulletin*.

B. Contact Persons

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, P. O. Box 8468, Rachel Carson State Office Building, Harrisburg, PA 17105-8468, (717) 772-3436; or Robert "Bo" Reiley, Assistant Counsel, Bureau of Regulatory Counsel, P. O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available through the Department of Environmental Protection's (Department) web site at www.dep.state.pa.us.

C. Statutory Authority

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (35 P. S. § 4005), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth, and section

5(a)(8), which grants the Board the authority to adopt rules and regulations designed to implement the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

D. Background and Purpose

PM is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot or smoke, are large or dark enough to be seen with the naked eye; others are so small they can only be detected using an electron microscope. PM includes "inhalable coarse particles," with diameters larger than 2.5 micrometers and smaller than 10 micrometers (PM-10) and "fine particles," with diameters that are 2.5 micrometers and smaller ($PM_{2.5}$). Epidemiological studies have shown a significant correlation between elevated levels of $PM_{2.5}$ and a number of serious health effects, including premature mortality, aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), lung disease, decreased lung function, asthma attacks and certain cardiovascular problems such as heart attacks and cardiac arrhythmia. See 70 FR 944 (January 5, 2005); 72 FR 20586 (April 25, 2007).

The United States Environmental Protection Agency (EPA) established the PM National Ambient Air Quality Standard (NAAQS) at 36 FR 8186 (April 30, 1971). The test method specified for determining attainment of the original standards was the high volume sampler, which collects filterable PM up to a nominal size of 25 to 45 micrograms (referred to as total suspended particulate or TSP). See 75 FR 80118, 80120 (December 21, 2010).

The Department of Environmental Resources, the predecessor agency to the Department, initially promulgated PM emission standards for combustion units, incinerators, and processes under §§ 123.11—123.13 at 1 Pa.B. 1804 (September 11, 1971). Test methods for determining emissions of PM were promulgated under § 139.12 at 2 Pa.B. 383 (March 20, 1972). These methods included the use of both dry filters and wet impingers to test for filterable and condensable PM.

The Department deleted the requirement to use wet impingers to test for PM at 27 Pa.B. 6804 (December 27, 1997) because that provision was more stringent than the applicable Federal requirement and provided little environmental benefit. Under this change, the owners and operators of existing stationary sources subject to the requirements of §§ 123.11—123.13 are required to test for compliance with filterable PM emission standards only.

The EPA revised the PM NAAQS to add a new standard for fine particles, using $PM_{2.5}$ as the indicator, at 62 FR 38652 (July 18, 1997). The EPA set the health-based (primary) and welfare-based (secondary) $PM_{2.5}$ annual standard at a level of 15 micrograms per cubic meter ($\mu g/m^3$) and the 24-hour standard at a level of 65 $\mu g/m^3$. The health-based primary standard is designed to protect human health from elevated levels of $PM_{2.5}$. The secondary standard is designed to protect against major environmental effects of $PM_{2.5}$ such as visibility impairment, soiling and materials damage.

The EPA lowered the primary and secondary 24-hour NAAQS for $PM_{2.5}$ to 35 $\mu g/m^3$ from 65 $\mu g/m^3$ at 71 FR 61236 (October 17, 2006). The following counties or portions thereof have been designated by the EPA as nonattainment for the 2006 fine particulate matter 24-hour NAAQS: Allegheny (partial), Armstrong (partial), Beaver, Bucks, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Greene (partial), Indiana (partial), Lancaster, Lawrence (partial), Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, Pittsburgh/Liberty-Clairton (partial), Washington, Westmoreland and York. See 74 FR 58688, 58758 (November 13, 2009).

Section 110 of the CAA (42 U.S.C.A. § 7410) requires State and local air pollution control agencies to develop, and submit to the EPA for approval, State Implementation Plans (SIPs) that provide for the attainment, maintenance and enforcement of the NAAQS in each air quality control region (or portion thereof) within each State. The emissions inventories and analyses used in the State's attainment demonstrations must consider PM-10 and $PM_{2.5}$ emissions from stationary sources that are significant contributors of primary PM-10 and $PM_{2.5}$ emissions.

Section 51.50 of 40 CFR (relating to *what definitions apply to this subpart*) defines primary PM-10 and $PM_{2.5}$ as including both the filterable and condensable fractions of PM. Filterable PM consists of those particles that are directly emitted by a source as a solid or liquid at the stack (or similar release conditions) and captured on the filter of a stack test train. Condensable PM is the material that is in vapor phase at stack conditions but condenses or reacts, or both, upon cooling and dilution in the ambient air to form solid or liquid PM immediately after discharge from the stack. The Commonwealth defines primary PM-10 and $PM_{2.5}$ in a similar manner as measured by the applicable reference method or equivalent method. See § 121.1.

The EPA promulgated revisions to its test methods for measuring filterable PM-10 and $PM_{2.5}$ and for measuring condensable PM emissions from stationary sources at 75 FR 80118 (December 21, 2010), which became effective on January 1, 2011. The final amendments to Method 201A add a particle-sizing device to allow for sampling of particulate matter with mean aerodynamic diameters less than or equal to 2.5 micrometers ($PM_{2.5}$ or fine particulate matter). The final amendments to Method 202 revise the sample collection and recovery procedures of the method to reduce the formation of reaction artifacts that could lead to inaccurate measurements of condensable particulate matter. The Department incorporates Methods 201A and 202, and revisions to these methods, by reference in the Department's *Source Testing Manual* under § 139.4(5) (relating to references).

Final-form § 139.12(a) clarifies that the owner and operator subject to the PM emission standards under §§ 123.11—123.13 are only required to test for filterable PM as provided in paragraphs (1)—(5). These owners and operators are not subject to the condensable PM test requirements under final-form subsections (b)—(d).

Final-form § 139.12(b) clarifies that the owner or operator of a stationary source subject to PM-10 and $PM_{2.5}$ emission limitations shall demonstrate compliance with those limitations by including both filterable and condensable PM. This subsection also clarifies that the owner or operator of a stationary source subject to applicability determinations under Chapter 127, Subchapters D and E (relating to prevention of significant deterioration of air quality; and new

source review) shall demonstrate compliance for filterable and condensable PM-10 and $PM_{2.5}$ emissions.

Final-form § 139.12(c) clarifies when compliance with a particulate matter, PM-10 OR $PM_{2.5}$ emission limitation must include condensable particulate matter.

Final-form § 139.12(d) explains the compliance demonstration process for the measurement and reporting of filterable and condensable PM. Subsection (d) also clarifies that use of test methods and procedures that are not specified in the Source Testing Manual requires the Department's prior written approval.

Final-form § 139.12(e) adds a cross reference to § 139.5 (relating to revisions to the source testing manual and the continuous source monitoring manual).

Final-form § 139.53 amends where monitoring reports must be filed.

The Department consulted with the Air Quality Technical Advisory Committee (AQTAC) on the final-form rulemaking on February 14, 2013. AQTAC had no comments and concurred with the Department's recommendation to present the final-form rulemaking to the Board for consideration. The Department also consulted with the Citizens Advisory Council (CAC) Policy and Regulatory Oversight Committee (Committee) on February 6, 2013. On the recommendation of the Committee, on February 19, 2013, the CAC concurred with the Department's recommendation to present the final-form rulemaking to the Board.

The final-form rulemaking only updates and clarifies the applicability of certain requirements to which the owners and operators of certain stationary sources are already subject; the final-form rulemaking does not impose new or additional requirements or compliance costs on these owners and operators.

The final-form rulemaking is reasonably necessary to attain and maintain the 1997 annual and 2006 24-hour $PM_{2.5}$ NAAQS and to satisfy related CAA requirements.

The final-form rulemaking will be submitted to the EPA upon final-form publication as a revision to the Commonwealth's SIP codified at 40 CFR 52.2020 (relating to identification of plan).

E. Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking

§ 121.1. Definitions.

Final-form § 121.1 is amended to add definitions for the terms "condensable particulate matter" and "filterable particulate matter" to support the final-form amendments to Chapter 139. These definitions are consistent with the Federal definitions. The Board removed the word "primary"

from the final-form definition of "condensable particulate matter" in response to public comments received. No change was made to the definition of "filterable particulate matter.

§ 139.12. Emissions of particulate matter.

The final-form rulemaking designates the existing language in § 139.12 as subsection (a) and adds subsections (b)—(d) to clarify filterable and condensable PM testing applicability requirements. Subsection (a) clarifies that the listed test procedures are to determine emissions of filterable PM only and not condensable PM from affected stationary sources for compliance with the PM emission standards set forth in §§ 123.11—123.13.

Subsection (b) provides that the owner or operator of a stationary source subject to emission limitations for PM-10 and $PM_{2.5}$ or to applicability determinations required under Chapter 127, Subchapters D and E shall demonstrate compliance for both filterable and condensable PM-10 and $PM_{2.5}$ emissions.

Subsection (c) provides that compliance with a PM, PM-10 or $PM_{2.5}$ emission limitation issued by the Department prior to January 1, 2011, shall not be based on condensable PM unless required by the terms and conditions of a plan approval, operating permit or the SIP in 40 CFR 52.2020 (relating to identification of plan).

Subsection (d) provides that a compliance demonstration required under subsection (b) or (c) must include the measurement and reporting of filterable and condensable PM. Test methods and procedures must be equivalent to those specified in § 139.4(5).

Subsection (e) provides a cross reference to § 139.5 to clarify how the Department revises the *Source Testing Manual*.

§ 139.53. Filing monitoring reports.

The final-form rulemaking amends § 139.53 to specify that the periodic emissions monitoring test reports shall be submitted to the applicable Regional Air Program Manager instead of the Regional Air Pollution Control Engineer and a copy of the report shall be submitted to the Chief of the Division of Source Testing and Monitoring. This change makes the filing of monitoring reports more efficient and timely.

F. Summary of Major Comments and Responses

Three commentators requested changes to the first sentence of § 139.12(c), to include PM10 and $PM_{2.5}$ in addition to particulate matter. The commentators explained this would clarify that condensable particulate matter is not included in determining compliance with emission limits for PM-10 and $PM_{2.5}$ that were established prior to January 1, 2011, unless required by a plan approval, operating permit, or the State Implementation Plan codified in 40 CFR § 52.2020 (relating to identification of plan). IRRC recommended that the Board either add this clarification or explain why it is unnecessary. The Board agrees. Final-form § 139.12(c) states

that compliance with a particulate matter, PM-10 or $PM_{2.5}$ emission limitation issued by the Department prior to January 1, 2011, will not be based on condensable particulate matter unless required under the terms and conditions of a plan approval, operating permit or the SIP.

A commentator requested that the phrase "or an applicability determination made" be added to § 139.12(c) because the EPA intended for condensable emissions to be considered prospectively for both emission limitation compliance demonstrations and major NSR program applicability determinations. The Board disagrees that the additional language is necessary. The final-form rulemaking clarifies the filterable and condensable PM testing applicability requirements adequately. Limitations regarding review of applicability determinations made before January 1, 2011, remain as established in the EPA's final rule for *Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$)*, 73 FR 28321 (May 16, 2008), and the EPA's final rule for *Methods for Measurement of Filterable PM_{10} and $PM_{2.5}$ and Measurement of Condensable PM Emissions From Stationary Sources*, 75 FR 80118 (December 21, 2010).

A commentator requested that § 139.12(c) be revised to expressly indicate that the Department will specify when an emission limitation for PM, PM10, or $PM_{2.5}$ is based on condensable emissions in addition to filterable emissions. The commentator asserts the regulated community understands a generic "particulate matter" emission limitation to mean filterable only, and that limitations expressed without specific reference to condensable emissions should be interpreted as filterable only. The Board has revised final-form § 139.12(c) as explained above. The Board disagrees with adding the commentator's other requested language because the provision set forth in final-form § 139.13(c) clearly states that compliance with a particulate matter emission limitation issued by the Department prior to January 1, 2011, will not be based on condensable particulate matter unless required under the terms and conditions of a plan approval, operating permit or the SIP. Compliance with a particulate matter emission limitation issued by the Department on and after January 1, 2011, will include condensable particulate matter as specified in § 139.12(b) and (d).

A commentator recommended revising § 139.12(b) to clarify that the applicability of the substantive requirements in subsection (b) is limited by subsections (a) and (c), by adding the phrase "except as provided in (a) and (c)" at the end of the last sentence in § 139.12(b). The Board's response is that the requirements of subsection (b) are not limited by subsections (a) or (c). The owner and operator of a regulated stationary source are required to meet the Federal requirements for particulate matter standards. The changes to the regulatory language and exceptions requested by the commentator would result in a regulation that does not comply with Federal requirements.

A commentator recommended removing the first sentence of § 139.12(d), contending that this sentence is redundant with § 139.12(b) and inconsistent with § 139.12(c). The Board disagrees that § 139.12(d) is redundant with § 139.12(b). Section 139.12(b) requires that the owner or operator of a unit subject to emission limitations for PM-10 and $PM_{2.5}$ demonstrate compliance for filterable and condensable PM10 and $PM_{2.5}$ emissions. The first sentence in § 139.12(d) requires the demonstration of compliance specified in § 139.12(b) to be made by measurement and reporting. The second sentence in § 139.12(d) follows by requiring that the measurement and reporting methods used are equivalent to the test methods and procedures specified in § 139.4(5). Further, the Board disagrees that § 139.12(d) conflicts with § 139.12(b). Testing of

filterable and condensable emissions is required regardless of whether the condensable portion will be used in the compliance demonstration. A compliance demonstration under § 139.12(c) shall include the measurement and reporting of both filterable and condensable particulate matter, regardless of whether the condensable portion is subject to compliance demonstration under subsection (c).

A commentator requested that the Board adopt EPA Conditional Test Method 039 as an equivalent alternative to EPA Test Methods 201A and 202. IRRC asked whether EPA Conditional Test Method 039 is equivalent to the methods specified in the *Source Testing Manual*. The Board's response is that the inclusion of a Federal Conditional Test Method (CTM) in the final-form rulemaking, that may be subject to change or may never be finalized, would be improper. The owner or operator of an affected source may request the Department's approval to use CTM 039 as an alternative method on a case-by-case basis in accordance with § 139.12(d), and the *Source Testing Manual* referenced in § 139.4(5). Condensable particulate matter is defined in § 1.3.1.3 (relating to definitions) of the *Source Testing Manual* as "The sum of the condensable organic particulate and the condensable inorganic particulate as determined by EPA Method 202 or an equivalent method."

A commentator recommended that the Board confirm that this rulemaking action will not affect the annual inventory required by § 135.3 (relating to reporting). The commentator asserts that operators are not currently required to include condensable emissions in the emission inventory. The Board agrees that this final-form rulemaking does not affect annual emission statement reporting requirements under § 135.21 (relating to emission statements) or annual emission inventory reporting requirements under § 135.3. Owners and operators of air contamination sources subject to those reporting requirements are presently required to report emissions of PM-10 and $PM_{2.5}$ in accordance with the Department's *Instructions for Completing the Annual Emission Statement Reporting Forms*. The Board disagrees with the commentator's assertion that operators are not currently required to include condensable emissions in the emission inventory. Condensable particulate emissions are a component of $PM_{2.5}$ and PM-10.

A commentator recommended that the Board clarify and address whether condensable emissions will be considered a regulated pollutant for purposes of calculating the Title V annual emission fees required by § 127.705 (relating to emission fees). IRRC noted it would review the Board's response to this comment as part of its determination of whether the final-form regulation is in the public interest. The Board responds that condensable particulate matter emissions are already regulated pollutants and required to be included in the accounting of a facility's emissions of particulate matter and reported for the purposes of calculating the Title V annual emission fees required by § 127.705. The final-form rulemaking does not add a separate fee for condensable particulate matter emissions.

IRRC commented that § 139.12(d) is not clear regarding who makes the determination that a test method or procedure is equivalent to those specified in the *Source Testing Manual*. IRRC recommended that the subsection be revised to clarify who makes the determination. The Board agreed and clarified that an owner or operator of a facility who wishes to use an alternative test method or procedure in place of a Commonwealth-specific test method or procedure specified in

the *Source Testing Manual* must obtain the Department's prior written approval. In such cases, the Department would review the documentation provided by the owner or operator that demonstrates that the alternative test method or procedure provides results that are equivalent and would issue a written determination to the owner or operator. However, the EPA would review the documentation and make the determination of whether an alternative test method or procedure is equivalent to a test requirement required under a Federal law or regulation.

IRRC requested that the Board consider cross referencing § 139.5 (relating to revisions to the source testing manual and continuous source monitoring manual) to clarify how the Department revises the *Source Testing Manual*. In response to IRRC's request, the Board added § 139.12(e) in the final-form rulemaking to cross reference § 139.5 as follows: The Source Testing Manual referenced in § 139.4(5) is subject to revision in accordance with the procedures described in § 139.5 (relating to revisions to the source testing manual and continuous monitoring manual).

G. Benefits, Costs and Compliance

Benefits

The final-form rulemaking accounts for emissions of condensable PM, which contribute to the formation of $PM_{2.5}$ in the atmosphere. Because condensable emissions exist almost entirely in the 2.5 micrometer range and smaller, and epidemiological studies have shown a significant correlation between elevated $PM_{2.5}$ levels and premature death, aggravation of heart and lung disease and asthma attacks, attaining and maintaining the $PM_{2.5}$ NAAQS is inherently more significant to the management of public health and welfare effects than attaining and maintaining prior PM NAAQS addressing larger particles. Therefore, it is important that the Commonwealth's air quality management of $PM_{2.5}$ promote a comprehensive and inclusive approach to measuring condensable PM emissions. Improved data will support development of better control strategies to reduce emissions of condensable PM and improve public health and welfare in areas that are designated as nonattainment for $PM_{2.5}$.

Compliance Costs

Because this final-form rulemaking updates and clarifies the applicability of certain requirements to which owners and operators of certain stationary sources are already subject, the final-form rulemaking does not impose new or additional requirements or compliance costs on the owners and operators of these existing stationary sources.

Compliance Assistance Plan

The regulated community is comprised of companies with sophisticated and experienced environmental staff. The owners and operators of these facilities have prior experience with regulatory programs and are technically capable of implementing the amended EPA test methods. The Department will post information on its web site to assist the public in understanding the requirements placed on the owners and operators of subject facilities.

Paperwork Requirements

Because this final-form rulemaking updates and clarifies the applicability of certain requirements to which the owners and operators of certain stationary sources are already subject, the final-form rulemaking does not impose additional paperwork requirements on the owners and operators of these existing stationary sources.

H. Pollution Prevention

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance. The major pollution prevention mechanism in the final-form rulemaking is to ensure a comprehensive, inclusive and accurate approach to measuring condensable PM emissions. Improved data will support the development of better control strategies to reduce emissions of condensable PM and improve public health and welfare in areas that are designated as nonattainment for $PM_{2.5}$.

I. Sunset Review

This final-form rulemaking will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

J. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on June 22, 2012, the Department submitted a copy of the notice of proposed rulemaking, published at 42 Pa.B. 4363, to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P. S. § 745.5a(j.2)), on _____, the final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on _____, and approved the final-form rulemaking.

K. Findings of the Board

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P. L. 769, No. 240) (45 P. S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 60-day public comment period was provided as required by law and the comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 42 Pa.B. 4363.

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this preamble.

(5) These regulations are necessary and appropriate to implement provisions of the CAA.

L. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapters 121 and 139, are amended by amending §§ 121.1, 139.12 and 139.53 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to IRRC and the Committees as required by the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania SIP.

(f) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

E. Christopher Abruzzo
Chairperson