

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

The Environmental Quality Board (Board) proposes to amend Chapters 121 and 139 (relating to general provisions; and sampling and testing) to read as set forth in Annex A. The proposed rulemaking would amend Chapter 139 to update and clarify what sampling and testing methods are used to demonstrate compliance with certain particulate matter (PM) emission limitations. The proposed change under § 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 proposed amendments under §§ 139.12(b) and (c) explain the process used for determining compliance with filterable and condensable PM emission limitations. The proposed amendment under § 139.12(d) explains the compliance demonstration process. The proposed change under § 139.53 (relating to filing monitoring reports) specifies where monitoring reports must be filed.

In addition to these substantive changes, the proposed rulemaking would amend Chapter 121 to add two terms and definitions in § 121.1 (relating to definitions) – “condensable particulate matter” and “filterable particulate matter.”

This proposed rulemaking was adopted by the Board at its meeting on \_\_\_\_\_, 2012.

**A. Effective Date**

This proposed rulemaking will be effective upon final-form publication in the *Pennsylvania Bulletin*.

**B. Contact Persons**

For further information, contact Arleen Shulman, 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. Information regarding submitting comments on this proposed rulemaking appears in Section J of this preamble. Persons with a disability may use the Pennsylvania AT&T Relay Service (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposed rulemaking is available electronically through the Department of Environmental Protection’s (Department) web site at [www.depweb.state.pa.us](http://www.depweb.state.pa.us) (DEP Search/Keyword: Public Participation).

**C. Statutory Authority**

This proposed 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<sub>2.5</sub>). Epidemiological studies have shown a significant correlation between elevated levels of PM<sub>2.5</sub> 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 on 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).

On September 11, 1971, 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. See 1 Pa.B. 1804. Then on March 20, 1972, test methods for determining emissions of PM were promulgated under § 139.12. See 2 Pa.B. 383. These methods included the use of both dry filters and wet impingers to test for filterable and condensable PM.

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

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

Subsequently, at 71 FR 61236, the EPA lowered the primary and secondary 24-hour NAAQS for PM<sub>2.5</sub> to 35 µg/m<sup>3</sup> from 65 µg/m<sup>3</sup> (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<sub>2.5</sub> emissions from stationary sources that are significant contributors of primary PM-10 and PM<sub>2.5</sub> emissions.

Federal regulations define primary PM-10 and PM<sub>2.5</sub> as including both the filterable and condensable fractions of PM. See 40 CFR 51.50 (relating to what definitions apply to this subpart?). 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<sub>2.5</sub> in a similar manner as measured by the applicable reference method or equivalent method. See 25 Pa. Code § 121.1.

The EPA promulgated revisions to its test methods for measuring filterable PM-10 and PM<sub>2.5</sub> and for measuring condensable PM emissions from stationary sources at 75 FR 80118 (December 21, 2010). 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<sub>2.5</sub> 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 by reference in the Department's *Source Testing Manual* under § 139.4(5) (relating to references).

Proposed § 139.12(a) clarifies that the owner and operator subject to the PM emission standards under §§ 123.11—123.13 is required to test only for filterable PM as provided in paragraphs (1)—(5) of this subsection. These owners and operators would not be subject to the filterable and condensable PM test requirements under proposed subsections (b)—(d).

Proposed § 139.12(b) clarifies that the owner and operator of a stationary sources subject to PM-10 and PM<sub>2.5</sub> emission limitations shall determine compliance with those limitations by using tests measuring both filterable and condensable PM. This subsection also clarifies that the owner and 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<sub>2.5</sub> emissions.

Additionally, the proposed amendment under § 139.12(c) explains the process used for determining compliance with filterable and condensable PM emission limitations.

The proposed amendment under § 139.12(d) explains the compliance demonstration process for the measurement and reporting of filterable and condensable PM.

The proposed change under § 139.53 modifies where monitoring reports must be filed.

The Department consulted with the Air Quality Technical Advisory Committee (AQTAC, Committee) on the proposed rulemaking on October 20, 2011. Prior to concurring with the Department's recommendation to present the proposed rulemaking to the Board for consideration, the AQTAC recommended that clarifications be made regarding the definition of "condensable particulate matter" and the effective compliance date for the provisions in § 139.12(b) and (d). The proposed rulemaking has been revised to address the Committee's concerns. The Department also consulted with the Citizens Advisory Council Air Committee on January 31, 2012.

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

The proposed rulemaking is reasonably necessary to attain and maintain the 1997 annual and 2006 24-hour PM<sub>2.5</sub> NAAQS and to satisfy related CAA requirements.

The proposed rulemaking will be submitted to the EPA upon final-form publication as a revision to the Commonwealth's SIP.

## **E. Summary of Regulatory Requirements**

### ***§ 121.1. Definitions.***

The proposed rulemaking amends § 121.1 to add definitions for the terms "condensable particulate matter" and "filterable particulate matter" to support the amendments to Chapter 139. These definitions are consistent with the Federal definitions.

### ***§ 139.12. Emissions of particulate matter.***

The proposed rulemaking revises the existing language in § 139.12 to proposed subsection (a) and adds proposed subsections (b), (c) and (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<sub>2.5</sub> or to applicability determinations required under Chapter 127, Subchapters D and E shall demonstrate compliance for both filterable and condensable PM-10 and PM<sub>2.5</sub> emissions.

Subsection (c) provides that compliance with a PM 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 codified at 40 CFR 52.2020 (relating to identification of plan).

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

#### ***§ 139.53. Filing monitoring reports.***

The proposed 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. Benefits, Costs and Compliance**

#### **Benefits**

The proposed rulemaking would account for emissions of condensable PM, which contribute to the formation of PM<sub>2.5</sub> 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<sub>2.5</sub> levels and premature death, aggravation of heart and lung disease and asthma attacks, attaining and maintaining the PM<sub>2.5</sub> 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<sub>2.5</sub> 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<sub>2.5</sub>.

#### **Compliance Costs**

Because this proposed rulemaking updates and clarifies the applicability of certain requirements to which owners and operators of certain stationary sources are already subject, the proposed

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

### **G. 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 proposed 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<sub>2.5</sub>.

### **H. Sunset Review**

These regulations 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.

### **I. Regulatory Review**

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on \_\_\_\_\_, the Department submitted a copy of this proposed rulemaking and a copy of a Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the

House and Senate Environmental Resources and Energy Committees. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections must specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking, by the Department, the General Assembly and the Governor of comments, recommendations or objections raised.

## **J. Public Comments**

**Written Comments**—Interested persons are invited to submit comments, suggestions or objections regarding the proposed rulemaking to the Environmental Quality Board, P. O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 16<sup>th</sup> Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board on or before \_\_\_\_\_. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received on or before \_\_\_\_\_. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

**Electronic Comments**—Comments may be submitted electronically to the Board at [RegComments@pa.gov](mailto:RegComments@pa.gov) and must also be received by the Board on or before \_\_\_\_\_. A subject heading of the proposed rulemaking and a return name and address must be included in each transmission. If an acknowledgement of electronic comments is not received by the sender within 2 working days, the comments should be retransmitted to the Board to ensure receipt.

## **K. Public Hearings**

The Board will hold three public hearings for the purpose of accepting comments on the proposed rulemaking. The hearings will be held as follows:

DATES, TIMES AND LOCATIONS TO BE INSERTED HERE

Persons wishing to present testimony at a hearing are requested to contact the Environmental Quality Board, P. O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least 1 week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to 10 minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans with Disabilities Act of 1990 should contact the Board at (717) 787-4526 or through the Pennsylvania AT&T Relay

Service at (800) 654-5984 (TDD) or (800) 654-5988 (voice users) to discuss how the Board may accommodate their needs.

Michael L. Krancer,  
Chairperson