

## PART G - METHODS

### §2107.01 GENERAL

*{effective February 1, 1994; amended effective October 20, 1995}*

- a. The methods specified in this Part shall be used to determine compliance with the emission standards, source standards and ambient air quality standards established by this Article. For purposes of determining compliance with NSPS's, NESHAP's, MACT's, and all other state and federal standards incorporated by reference into this Article, the methods specified in the applicable standard shall be used, or where no such methods are specified, methods approved by the Department shall be used.
- b. All sampling and analytical procedures promulgated by the Administrator under the Clean Air Act and by the Pa. Environmental Quality Board and Dept. of Environmental Protection (DEP) under the Pa. Air Pollution Control Act as set forth, or referenced, in 25 Pa. Code Chapter 139 Subchapter A, are hereby incorporated, by reference, as part of the methods specified in this Part. Additions, revisions, and deletions to such procedures adopted by the EPA and the DEP are incorporated into this Article and are effective on the date established by the Federal regulations, unless otherwise established by regulation under this Article.
- c. The Department may, upon written application setting forth all necessary information, approve in writing a method other than those specified by this Part if it finds that, for the particular source or air pollution control equipment involved, such method is equivalent to the methods specified by this Part and that such methods are consistent with accepted air pollution testing practices and with obtaining accurate results which are representative of the conditions evaluated.
- d. The methods specified in this Part and approved under Subsection c of this Section shall be compiled in the Source Testing Manual of the Allegheny County Bureau of Environmental Quality Division of Air Quality. Such Manual shall be open to public inspection during business hours at the headquarters of the Division of Air Quality and at the Allegheny County Health Department Library. In addition, any person shall, upon request and upon payment of the reasonable costs of furnishing such material, be furnished with copies of the Manual or parts thereof.

### §2107.02 PARTICULATE MATTER

*{effective February 1, 1994; amended effective October 20, 1995}*

- a. Test Methods.
  1. Except as provided below in this Section, the following methods shall be used to determine particulate matter emissions from stationary sources, as specified in Chapters 1 through 5 inclusive of the Allegheny County Source Testing Manual:
    - A. Method 1 through 5F inclusive - "Determination of Particulate Emissions from Stationary Sources," United States Environmental Protection Agency, 40 CFR 60 Appendix A.
  2. Determination of compliance with the pushing emission standard for **coke ovens** set forth in §2105.21 of this Article shall be performed as specified in Chapter 54 of the Allegheny County Source Testing Manual, entitled "Determination of Particulate Emissions for Coke Oven Pushing Sources."
  3. Determination of compliance with particulate matter standards for sources equipped with pressurized baghouses shall be performed as specified in Chapter 45 of the Allegheny County Source Testing Manual, entitled "Determination of Particulate Matter from Pressurized Bagoes."

4. Determination of compliance with particulate matter standards for sources equipped with modular baghouses shall be performed as specified in Chapter 47 of the Allegheny County Source Testing Manual, entitled "Determination of Particulate Matter from Modular Baghouses."
  5. The following methods shall be used to determine PM-10 emissions from stationary sources, as specified in Chapter 201 of the Allegheny County Source Testing Manual:
    - A. Method 201 - "Determination of PM-10 Emissions (Exhaust Gas Recycle Procedure)," United States Environmental Protection Agency, 40 CFR 51 Appendix M; or
    - B. Method 201A - "Determination of PM-10 Emissions (Constant Sampling Rate Procedure)," United States Environmental Protection Agency, 40 CFR 51 Appendix M.
  6. The following method shall be used to determine condensible particulate emissions from stationary sources, as specified in Chapter 202 of the Allegheny County Source Testing Manual:
    - A. Method 202 - "Determination of Condensible Particulate Emissions from Stationary Sources," United States Environmental Protection Agency, 40 CFR 51 Appendix M.
  7. Determination of compliance with PM-10 standards for fugitive emissions from sources located within a structure shall be performed as specified in Chapter 53 of the Allegheny County Source Testing Manual, entitled "Determination of Inhalable Fugitive Particulate Emissions from Air Pollution Sources Within a Structure."
- b. Calibration. Calibration of test instruments shall be performed as specified in Chapter 50 of the Allegheny County Source Testing Manual relating to Calibration and Maintenance.

### §2107.03 SULFUR OXIDES

The following methods shall be used to determine sulfur oxide emissions from stationary sources, as specified in Chapters 6 and 8 of the Allegheny County Source Testing Manual:

- a. Methods 6 through 6C - "Determination of Sulfur Dioxide Emissions from Stationary Sources," and
- b. Method 8 - "Determination of Sulfuric Acid Mist and Sulfur Dioxide Emissions from Stationary Sources," United States Environmental Protection Agency, 40 CFR 60 Appendix A.

### §2107.04 VOLATILE ORGANIC COMPOUNDS

- a. **General.** The following method shall be used to determine volatile organic compound emissions from stationary sources, as specified in Chapter 25 of the Allegheny County Source Testing Manual:
  1. Method 25 - Determination of Total Gaseous Non-Methane Organic Emissions as Carbon, "Standards for Performance for New Stationary Sources; Addition of Reference Methods 24 and 25 to Appendix A," Federal Register, Part VII, Volume 45, Number 194, Pages 65956 - 65973, October 3, 1980, Washington, D.C.
  2. Method 25A - Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer, U.S. EPA Appendix A - Reference Methods (as amended at Fed. Reg., V. 55, No. 220, Pg. 47471, Nov. 14, 1990, Washington, D.C.), 40 CFR Chapter I Part 60 Appendix A Method

25A, Washington, D.C., "Measurement of Volatile Organic Compounds - Guideline Series," U.S. EPA, Research Triangle Park, NC, Publ. No. EPA-450/2-78-041, June, 1978, pp. 46-54.

3. Method 25B - Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer, U.S. EPA Appendix A - Reference Methods (as amended at Fed. Reg., V. 55, No. 220, Pg. 47471, Nov. 14, 1990, Washington, D.C.), 40 CFR Chapter I Part 60 Appendix A Method 25B, Washington, D.C., "Measurement of Volatile Organic Compounds - Guideline Series," U.S. EPA, Research Triangle Park, NC, Publ. No. EPA-450/2-78-041, June, 1978, pp. 46-54.

b. **Gasoline Vapor Recovery Systems.** The following methods shall be used to determine volatile organic compound emissions from vapor recovery systems for gasoline loading operations:

1. Emission Test Procedures for Tank Truck Gasoline Loading Terminals (Appendix A), "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals", EPA - 450/2-77-026, United States Environmental Protection Agency, October, 1977, as specified in Chapter 55 of the Allegheny County Source Testing Manual, entitled "Determination of Volatile Organic Compound Emissions from Vapor Recovery Systems for Gasoline Loading Operations."
2. "Sampling and Testing Procedure for Gasoline Facilities", Allegheny County Source Testing Manual, Chapters 25 and 27.

c. **Surface Coatings.** The following methods shall be used to determine the volatile organic compound content, water content, and density of surface coatings and inks, as specified in Chapter 24 of the Allegheny County Source Testing Manual:

1. Method 24 - Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, "Standards for Performance for New Stationary Sources; Addition of Reference Methods 24 and 25 to Appendix A," Federal Register, Part VII, Volume 45, Number 194, Pages 65956 - 65973, October 3, 1980, Washington, D.C.

d. **Effluent Water.** The following method shall be used to determine the volatile organic compound content of effluent water:

1. Standard Methods for the Examination of Water and Wastewater, 14th Edition, "Organic Carbon (total), Combustion - Infrared Method", American Public Health Association, Washington, D.C., as specified in Chapter 46 of the Allegheny County Source Testing Manual, entitled "Determination of Volatile Organic Compound Content of Effluent H<sub>2</sub>O."

e. **Control System Effectiveness.** The following methods shall be used to determine the effectiveness of vapor recovery systems and similar control equipment for volatile organic compound emissions:

1. "Sampling and Testing Procedure for Gasoline Facilities", Allegheny County Source Testing Manual, Chapter 25.

f. **Tank Trucks.** The following method shall be used to determine the leak tightness of gasoline tank trucks and vapor recovery systems pursuant to §2105.13 of this Article:

1. Pressure - Vacuum Test Procedures for Leak Tightness of Truck Tanks (Appendix A), "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA - 450/2-78-051, U.S. Environmental Protection Agency, December, 1978, as specified in Chapter 56 of the Allegheny County Source Testing Manual, entitled "Determination of the Leak Tightness of Gasoline Tank Trucks and Vapor Recovery Systems".

- g. **Tank Trucks and Vapor Collection Systems.** The following method shall be used to determine the magnitude of leaks of volatile organic compounds from gasoline tank trucks and vapor collection systems and shall be used in the annual tests required of gasoline tank trucks:
1. Gasoline Vapor Leak Detection Procedure by Combustible Gas Detector (Appendix B), "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems", EPA - 450/2-78-051, U.S. Environmental Protection Agency, December, 1978, as specified in Chapter 57 of the Allegheny County Source Testing Manual, entitled "Determination of the Magnitude of Leaks of Volatile Organic Compounds from Gasoline Tank Trucks and Vapor Recovery Systems".
- h. **Perchloroethylene Dry Cleaning Facilities.** The following method shall be used to determine compliance with the requirements of §2105.18 of this Article, relating to perchloroethylene dry cleaning facilities:
1. Appendix B, "Compliance Test Method and Leak Detection Equipment for Perchloroethylene Dry Cleaners", Measurement of Volatile Organic Compounds, U.S. Environmental Protection Agency, EPA - 450/2-78-041, Washington, D.C., as specified in Chapter 58 of the Allegheny County Source Testing Manual, entitled "Determination of Compliance of Perchloroethylene Dry Cleaning Facilities".
- i. **Synthetic Organic Chemical and Polymer Manufacturing and Petroleum Refinery Equipment.** The following method shall be used to determine the magnitude of volatile organic compound leaks from synthetic organic chemical and polymer manufacturing and petroleum refinery equipment, as specified in Chapter 21 of the Allegheny County Source Testing Manual:
1. Method 21 - Determination of Volatile Organic Compounds Leaks, 40 C.F.R. Part 60, Appendix A, 48 FR 37600, August 18, 1983, Washington, D.C.
- j. **Petroleum Solvent Dry Cleaning Facilities.**
1. Any person who operates, or allows to be operated, any affected petroleum solvent dry cleaning dryer shall calculate the weight of VOCs vented from the dryer emission control device by using EPA Reference Test (40 CFR Part 60) Methods 1, 2, and 25A as specified in Chapters 1, 2, and 25 of the Allegheny County Source Testing Manual.
  2. Any person who operates, or allows to be operated, any affected petroleum solvent dry cleaning facility demonstrating compliance, where employing a petroleum solvent filtration system but not employing cartridge filters, shall calculate, record, and report to the Department the weight of VOCs contained in each of at least five 3-pound samples of filtration waste material taken at intervals of at least one week by employing ASTM Method D322-80 (Standard Test Method for Gasoline Diluent in used Gasoline Engine Oils by Distillation), as specified in Chapter 59 of the Allegheny County Source Testing Manual, entitled "Determination of Compliance of Petroleum Solvent Dry Cleaning Facilities Employing a Petroleum Solvent Filtration System But Not Employing Cartridge Filters".

## §2107.05 NITROGEN OXIDES

The following method shall be used to determine nitrogen oxide emissions from stationary sources, as specified in Chapter 7 of the Allegheny County Source Testing Manual:

- a. Methods 7, 7A, 7C, 7D, & 7E - "Determination of Nitrogen Oxide Emissions from Stationary Sources", United States Environmental Protection Agency, 40 CFR 60 Appendix A.

## **§2107.06 INCINERATOR TEMPERATURES**

Measurement of incinerator temperatures shall be performed as specified in Chapter 40 of the Allegheny County Source Testing Manual, entitled "Determination of Incineration Temperatures".

## **§2107.07 COKE OVEN EMISSIONS**

Unless otherwise specified in the applicable regulation, measurements of emissions from **coke ovens** and **coke oven batteries** shall be performed as specified in Chapter 109 of the Allegheny County Source Testing Manual, entitled "Determination of Emissions from Coke Ovens". Measurements of water quality shall be performed according to procedures established or approved by the Commonwealth.

## **§2107.08 COKE OVEN GAS**

Measurements of the hydrogen sulfide concentration of **coke oven gas** shall be performed as specified in Chapter 44 of the Allegheny County Source Testing Manual, entitled "Determination of Hydrogen Sulfide from Coke Oven Gas".

## **§2107.09 HYDROGEN SULFIDE**

The following method shall be used to determine hydrogen sulfide emissions from stationary sources, as specified in Chapter 15 of the Allegheny County Source Testing Manual:

Method 15 - "Determination of Hydrogen Sulfide, Carbonyl Sulfide, and Carbon Disulfide Emissions from Stationary Sources", United States Environmental Protection Agency, 40 CFR 60 Appendix A.

## **§2107.10 SULFUR CONTENT OF COKE**

The following method shall be used to determine the sulfur content of coke, as specified in Chapter 49 of the Allegheny County Source Testing Manual:

"Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke", American Society for Testing Materials, D 3177, 1916 Race Street, Philadelphia, PA.

## **§2107.11 VISIBLE EMISSIONS** *{Amended February 12, 2007, effective April 1, 2007.}*

Measurements of visible emissions shall be performed in either of the following two ways:

- a. As specified in Chapter 9 of the Allegheny County Source Testing Manual, entitled "Visible Determination of the Opacity of Emissions from Stationary Sources;" or
- b. Using any continuous opacity monitoring system (COMS) required by regulation, permit, consent agreement, consent decree, or enforcement order.

## §2107.12 WASTE-DERIVED LIQUID FUEL

Sampling and analysis and equipment testing to determine compliance with the waste-derived liquid fuel burning regulations under this Article shall be performed as specified in Chapter 52 of the Allegheny County Source Testing Manual.

## §2107.13 ODOR EMISSIONS

Measurements of odor emissions beyond source boundary lines shall be performed as specified in Chapter 48 of the Allegheny County Source Testing Manual, entitled "Measurement of Odor Emissions Beyond Source Boundary Lines".

## §2107.14 LEAD

- a. The following methods shall be used to determine the lead content of paint, as specified in the Allegheny County Source Testing Manual:
  1. "Field Sampling of Coating Films for Laboratory Analysis of Toxic Metal Content (KTA/SET Method LD2)", Steel Structures Painting Council Publ. No. 94-18.
  2. ASTM E 1645, Practice for the Preparation of Dried Paint Samples for Subsequent Analysis by Atomic Spectrometry.
  3. ASTM D 3335, Standard Test Method for Low Concentrations of Lead, Cadmium, and Cobalt in Paint by Atomic Absorption Spectroscopy.
  4. EPA Method 6010, Inductively Coupled Plasma Atomic Emission Spectroscopy.
  5. ASTM E 1613, Standard Method for the Analysis of Digested Samples for Lead by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES), Flame Atomic Absorption (FAAS), or Graphite Furnace.

## §2107.15 GASOLINE VOLATILITY and RFG

*{This section added by May 7, 1998 amendment, effective May 15, 1998}*

- a. **Volatility.** Any sampling or testing of gasoline required by Section 2105.90 shall be performed according to the following methods as specified in Chapter 61 of the Allegheny County Source Testing Manual:
  1. Sampling of gasoline for the purpose of determining compliance with §2105.90 shall be conducted in accordance with 40 CFR Part 80, Appendix D (relating to sampling procedures for fuel volatility).
  2. Testing of gasoline for purposes of determining compliance with §2105.90 shall be conducted in accordance with 40 CFR Part 80, Appendix E (relating to test for determining the RVP of gasoline and gasoline-oxygenate blend).
- b. **RFG.** RFG shall be certified and tested in accordance with the requirements listed in 40 CFR Part 80 Subpart D (relating to reformulated gasoline) as specified in Chapter 61 of the Allegheny County Source Testing Manual.

## §2107.20 AMBIENT MEASUREMENTS

The following methods shall be used to determine concentrations in the ambient air of the air contaminants listed below:

- a. **Asbestos** - The "aggressive sampling" procedures and the procedures for the measuring of fiber content of a known volume of air collected during a specific period of time in accordance with either, in the sole discretion of the Department:
  1. NIOSH Standard Analytical Method for Asbestos in Air - P&CAM 239;
  2. EPA Method 7400; or
  3. Transmission Electron Microscopy (TEM).
- b. **Beryllium** - "Air Pollution Measurements of the National Air Sampling Network: Analysis of Suspended Particulates in 1957 - 1961", Public Health Service Pub. No. 978, Washington, D.C., 1962.
- c. **Carbon Monoxide** - "Measurement Principle and Calibration Procedure for the Continuous Measurement of Carbon Monoxide in the Atmosphere (Non-Dispersive Infrared Spectrometry)", United States Environmental Protection Agency pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- d. **Fluorides** - "Standard Method of Test for Inorganic Fluoride in the Atmosphere", ASTM Standards on Methods of Atmospheric Sampling and Analysis, Philadelphia, PA 1962, p.67.
- e. **Hydrocarbons** - "Reference Method for Determination of Hydrocarbons Corrected for Methane", United States Environmental Protection Agency, 40 CFR 50 Appendix E, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- f. **Hydrogen Sulfide** - Jacobs, M.D., et al., "Ultramicrodetermination of Sulfides in the Air", Anal. Chem., 29:1349 (1957).
- g. **Lead** - "Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air", United States Environmental Protection Agency, 40 CFR 50 Appendix G, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- h. **Nitrogen Oxides** - "Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase Chemiluminescence)", United States Environmental Protection Agency, 40 CFR 50, Appendix F, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- i. **Ozone** - "Measurement Principle and Calibration Procedure for the Measurement of Ozone in the Atmosphere", United States Environmental Protection Agency, 40 CFR 50 Appendix D, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- j. **PM-10** - "Reference Method for the Determination of Particulate Matter as PM-10 in the Atmosphere," United States Environmental Protection Agency, 40 CFR 50, Appendix J, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods," 40 CFR 53.

- k. **Settled Particulates** - "Recommended Standard Method for Continuing Dust Fall Survey (APM- 1 Revision 1)," TR-2 Air Pollution Measurements Committee, J. Air. Poll. Control Assoc., 16:372 (1966).
- l. **Sulfates:**
  - 1. Sampling Method - "Air Pollution Measurements of the National Air Sampling Network: Analysis of Suspended Particulates 1957 - 1961", Public Health Service Pub. 978, Washington, D.C. 1962.
  - 2. Analytical Method - Interbranch Chemical Advisory Committee, "Selected Methods for the Measurement of Air Pollutants", PHS Pub. No. 999-AP-11, Cincinnati, Ohio, 1965, p.I.1.
- m. **Sulfur Oxides** - "Reference Method for the Determination of Suspended Particulates in the Atmosphere (Pararosaniline Method)", United States Environmental Protection Agency, 40 CFR 50 Appendix A, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Methods", 40 CFR 53.
- n. **Suspended Particulate Matter** - "Reference Method for the Determination of Suspended Particulates in the Atmosphere (High Volume Method)", United States Environmental Protection Agency, 40 CFR 50, Appendix B, or equivalent methods, if any, certified by the EPA pursuant to "Ambient Air Monitoring Reference and Equivalent Method", 40 CFR 53.