



**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF AIR QUALITY**

**SECTION 111(d)/129 STATE PLAN  
FOR LARGE MUNICIPAL WASTE COMBUSTORS (MWCs)**

**April 27, 1998**

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## SECTION 111(d)/129 STATE PLAN FOR LARGE MUNICIPAL WASTE COMBUSTORS

### I. BACKGROUND/INTRODUCTION

On December 19, 1995, the U.S. Environmental Protection Agency (EPA) promulgated performance standards for new municipal waste combustors (MWCs) and emission guidelines (EG) for existing MWCs under Sections 111 and 129 of the federal Clean Air Act (CAA). The standards of performance for new stationary sources (NSPS) for new MWCs, and the emission guidelines for existing large MWCs are codified at 40 CFR Part 60, Subpart Eb and Subpart Cb, respectively (attached hereto as Appendix A). Subpart Cb applied to existing MWCs, constructed on or before September 20, 1994, located at MWC facilities with an aggregate combustion capacity to burn more than 35 megagrams per day (approximately 39 tons per day) of municipal solid waste.

The emission guidelines established emission levels for MWC organics (dioxins/furans), MWC metals (cadmium, lead, mercury), particulate matter (PM and opacity), MWC gases (hydrogen chloride and sulfur dioxide), nitrogen oxide, and MWC fugitive ash emissions. Subpart Cb also established requirements for operating practices (carbon monoxide, load, flue gas, temperature at the PM control device inlet, and operator training/certification). Compliance must be achieved within three years after approval of the Section 111(d)/129 State Plan by EPA or December 19, 2000, whichever occurred earlier.

On December 6, 1996, the Court of Appeals for the District of Columbia Circuit vacated the 1995 standards and guidelines because the standards failed to require an evaluation of individual MWC units on a unit-by-unit basis to determine whether the combustors exceed the 250 tons or more of waste per day capacity. The standards were vacated in their entirety and remanded to EPA for further proceedings because counsel for EPA stated at oral argument that the 1995 standards needed to be vacated in their entirety if the Court decided that MWC units had to be recategorized by unit capacity, *Davis County Solid Waste Management District v. EPA*, 101 F. 3d 1395 (D.C. Cir 1996).

On February 4, 1997, EPA filed a petition for rehearing on the remedy portion of the Davis opinion, requesting that the Court only vacate the standards and guidelines for cement kilns and combustion units with capacities less than or equal to 250 tons per day. On March 21, 1997, the United States Court of Appeals for the District of Columbia Circuit issued an order and opinion which remanded the standards and guidelines for large MWCs to EPA for recalculation of the maximum achievable control technology (MACT) floors for large combustors. *Davis County Solid Waste Management District v. EPA*, 108 F. 3d 1454 (D.C. Cir. 1997). Existing large MWC units with a combustion capacity greater than 250 tons per day must comply with the Subpart Cb requirements. On August 25, 1997, EPA promulgated supplemental emission limits for lead, sulfur dioxide, hydrogen chloride and nitrogen oxides because of the revised MACT floors. See 62 Federal Register 45116 (8/25/97). As a result of the Davis decision, the Subpart Cb requirements apply solely to existing large MWC facilities with capacities greater than 250 tons per day.

State plans must include a schedule for compliance with Subpart Cb requirements. All designated MWC units for which construction was commenced after June 26, 1987 must comply with mercury and dioxins/furans emission limits within one year following the issuance of either new or revised federally enforceable state operating permits (FESOPs) or within 1 year following EPA approval of State Plan, whichever is later. The designated large MWC units must comply with the other 1995 emission standards by December 19, 2000. Because of the revised MACT floors, designated facilities must also achieve compliance with the supplemental emission limits for lead, sulfur dioxide, and hydrogen chloride no later than August 26, 2002, or 3 years after EPA approval of the state plan, whichever is first (see 62 FR 45118).

The procedures for adoption and submittal of State Plans are codified in 40 CFR Part 60 Subpart B. The Subpart B provisions were amended by EPA to include specifications that supersede the provision in Subpart B regarding the schedule for submittal of State Plans under Section 129 of the Clean Air Act, the stringency of emission limitations, and the compliance schedule. The Section 111(d)/129 State Plan must be as protective as the Subpart Cb requirements.

The State Plan for large MWC units in the Commonwealth of Pennsylvania has been developed in accordance with Sections 111(d) and 129 of the Clean Air Act. This State Plan includes a demonstration of legal authority, identification of enforceable mechanisms, an inventory of MWC units and emissions, compliance schedules, closure requirements and emissions limitations. As required under 40 CFR Parts 60, Subparts B and Cb, the plan also contains testing, monitoring, recordkeeping, and reporting requirements, a record of the public hearing, and provisions for the submittal of annual progress reports to EPA related to compliance and enforcement.

## **II. PUBLIC PARTICIPATION [40 CFR §60.23(f)]**

Prior to submitting the Section 111(d)/129 State Plan to EPA for approval, the Pennsylvania Department of Environmental Protection (PADEP or Department) held two public hearings for the purpose of accepting testimony on the proposed Section 111(d)/129 State plan for MWCs. The public hearings were held at the following PADEP Regional offices on the following dates and times:

January 7, 1998 Time: 2:00 p.m.	Southeast Regional Office Main Conference Room 555 North Lane, Suite 6010 Conshohocken, PA 19428
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January 8, 1998 Time: 1:00 p.m.	Rachel Carson State Office Building 2 <sup>nd</sup> Floor Auditorium 400 Market Street Harrisburg, PA 17105
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The Department provided notice of the date, time and location of the hearings at least 30 days prior to the scheduled date of the hearing, as required under 40 CFR §60.23. The Notice of

Public Hearing and opportunity to provide written comments was published in the *Pennsylvania Bulletin* on December 6, 1997 (27 Pa. B. 6373, 12/6/97) and prominently displayed in the following newspapers of general circulation:

1. Philadelphia Inquirer, Philadelphia, PA (December 6, 1997)
2. Lancaster New Era (December 6, 1997)
3. York Newspaper Co. (December 7, 1997)
4. The Patriot News Co. (December 9, 1997)

The Department also provided notice of the date, time and location of each hearing to EPA, local air pollution control agencies and any state in the interstate region whose air quality may be affected by emissions from MWCs subject to the Subpart Cb requirements.

Persons interested in providing testimony on the proposed Section 111(d)/129 State Plan were required to notify PADEP at least 10 days prior to the hearing to reserve an opportunity to provide testimony. The Department requested that each witness provide three written copies of the oral testimony presented at the hearing.

The public hearings, which began at 2:00 p.m. (Conshohocken) on January 7<sup>th</sup> and at 1:00 p.m. (Harrisburg) on January 8<sup>th</sup> were attended by representatives from industry, local government agencies and environmental groups. Testimony was provided by the following: Andrew Szurgot, Vice President, Safety and Environment, American Ref-Fuel Company, Tim Porter, Director, Air Quality Management Wheelabrator Environmental Systems Inc., Jane Garbacz, Citizen Anetha Lue, Environmental Coordinator, Montenay Montgomery Limited Partnership and Maria Zannes, President of Integrated Waste Services Association. A copy of each person's testimony is available for review by the public and will be maintained by PADEP for at least 2 years.

Interested persons were also invited to submit written comments on the proposed State Plan to the Department on or before January 16, 1998. In addition to testimony received at the public hearings, written comments were submitted by Makeba Morris, Chief, Technical Assessment Section, EPA Region III, Daniel Lispi, Project Manager, Harrisburg Materials, Energy, Recycling and Recovery Facility, Glen Hoag, Facility Manager, Ogden Martin Systems of Lancaster, Inc., Jason Rash, Clean Air Council, David Vollero, Manager, York County Solid Waste & Refuse Authority. A Comment and Response Document which addresses the comments received during the public participation process has been prepared by the Department. Copies of the public hearing notices, listing of public hearing attendees, transcripts of the public hearings, written comments and the Comment and Response Document are attached hereto as Appendix B.

In accordance with 40 CFR §60.23(f)(1), the State Plan for large MWCs includes a certification that the public hearings were held in accordance with the criteria specified in 40 CFR §60.23(d). The public hearing certification is attached hereto as Appendix B-2 (relating to public hearing certification).

### **III. IMPLEMENTATION OF THE SECTION 111(d)/129 STATE PLAN**

Owners and operators of existing MWC units who are subject to the Emission Guidelines for large MWCs must demonstrate to the Department that the designated facility is in compliance with the applicable requirements of the Clean Air Act including “a standard or other requirement governing solid waste incineration under Section 129 of the Clean Air Act (42 U.S.C.A §7429). On December 27, 1997, the Department adopted in their entirety and incorporated by reference the Emission Guidelines promulgated in 40 CFR Part 60. See 27 Pa. B. 6809 and 25 Pa. Code §122.3.

The Department will either issue new federally enforceable state-operating permits (FESOPs) or amend existing FESOPs for MWCs to incorporate the applicable requirements in 40 CFR Part 60. Finalized permits will be submitted to EPA no later than June 30, 1998. The revised or newly issued FESOPs issued to owners and operators of existing MWCs will implement the Subpart Cb requirements. The emission guidelines, adopted and incorporated by reference in 25 Pa. Code §122.3 (relating to adoption of standards), will serve as the legally enforceable mechanism to implement the Subpart Cb requirements. For purposes of meeting the requirements of the Section 111(d)/129 State Plan, FESOP terms and conditions, developed pursuant to 40 CFR Part 60, Subparts A, B, Cb, and Eb will be non-expiring and will continue in full force and effect until modified by the Department. Each FESOP will include a reference to applicable definitions in Subparts A, B, Cb, and Eb. Subsequently, FESOP terms and conditions will be included in Title V permits as “applicable requirements.”

Subpart Cb requirements for existing large MWCs will be implemented by the Department as follows:

a. PADEP will provide prior written notice to the owners or operators of existing large designated MWCs requiring them to submit a Title V operating permit application to PADEP within 120 days of the date of the notice. §127.505(a).

b. In accordance with the requirements in 25 Pa. Code §§127.12b(b) and 127.441(b), the Department will include the Subpart Cb requirements in FESOPs, Title V permits or plan approvals, if necessary.

c. Upon completion of the technical review, the PADEP will prepare and publish notice in the *Pennsylvania Bulletin* of action to be taken on the proposed FESOPs, Title V permits or approvals. The public notice procedures set forth in 25 Pa. Code Chapter 127 (relating to construction, modification and reactivation of sources) shall apply.

PADEP will also provide notice to MWC owners and operators, the EPA, any state within 50 miles of the facility and any contiguous state whose air quality may be affected by a designated MWC plant. The owner or operator of the MWC plant will publish notice of the FESOP, Title V permit or plan approval on at least 3 separate days in a prominent place and site in a newspaper of general circulation in the county in which the designated facility is located (see 25 Pa. Code §§127.424 (b) and 127.521).

d. Prior to issuance of either a new or amended FESOP, Title V permit or plan approval, PADEP will provide at least a 30-day comment period, commencing from the date of publication of the proposed action, for the submission of written comments on the proposed FESOP, Title V permit or plan approval.

e. The Department will submit to EPA copies of proposed FESOPS, Title V permits and plan approvals which require designated facilities to satisfy the Subpart Cb requirements. The Department will include supporting documentation such as review memoranda prepared by PADEP personnel in accordance with 25 Pa. Code §127.522(f). PADEP will not issue a plan approval, FESOP or Title V permit containing the Subpart Cb requirements if EPA provides written notification that the FESOP, Title V permit or plan approval does not comply with the Clean Air Act or the regulations thereunder.

f. Following issuance or modification of FESOPs incorporating Subpart Cb requirements, PADEP will submit the final permits to EPA no later than June 30, 1998. Subsequently, the FESOP terms and conditions will be included in Title V permits as “applicable requirements.”

g. Pursuant to 40 CFR §60.25(e), the Department will submit to EPA a report, on an annual basis, which details the progress in the enforcement of the MWC State Plan. The first progress report will be submitted to EPA one year after approval of the Section 111(d)/129 State Plan for existing large MWCs. The annual progress report will include the elements described in 40 CFR §60.25(f).

#### **IV. EMISSION STANDARDS AND OTHER REQUIREMENTS** **[40 CFR §60.24 and 40 CFR §60.33b and 25 Pa. Code §122.3]**

##### **A. Emission Standards**

In accordance with Section 129(b)(2) of the Clean Air Act, Section 111(d)/129 State Plans must include MWC emission limitations of metals, acid gases, organics, and nitrogen oxides that are “at least as protective” as the limitations codified in 40 CFR Part 60, Subpart Cb. The MWC emission limitations are incorporated by reference in their entirety in 25 Pa. Code §122.3 (relating to adoption of standards). As a result, the emission standards in the Commonwealth’s Section 111(d)/129 State Plan for MWCs are identical to the standards in 40 CFR §60.33b (relating to emission guidelines for municipal waste combustor metals, acid gases, organics, and nitrogen oxides).

The owners or operators of designated facilities must comply with emission limits at least as stringent as the emission limits shown below by December 19, 2000. The owners or operators of designated MWC units for which construction was commenced after June 26, 1987 must comply with mercury and dioxins/furans emission limits within one year following the issuance of new/revised federally enforceable state operating permits (FESOPs) or within 1 year following EPA approval of State Plan, whichever is later. In addition, the large MWC units must comply with the “supplemental emission limits” for lead, hydrogen chloride, and sulfur dioxide no later than August 26, 2002, or 3 years after EPA approval of the Plan, whichever is first. The

emissions discharged to the atmosphere from large MWCs shall be as least as stringent as the limits for the following pollutants:

1. Particulate Matter -- 27 milligrams per dry standard cubic meter, corrected to 7 percent oxygen limit for particulate matter is the emission limit for gases discharged to the atmosphere (40 CFR §60.33b(a)(1)(i)).
2. Opacity -- 10 percent (6-minute average) as specified in 40 CFR §60.33b(a)(1)(iii).
3. Cadmium -- 0.040 milligrams per dry standard cubic meter, corrected to 7 percent oxygen (40 CFR §60.33b(a)(2)(i)).
4. Lead -- 0.49 milligrams per dry standard cubic meter, corrected to 7 percent oxygen (40 CFR §60.33b(a)(2) (iii)).

Lead -- 0.44 milligrams per dry standard cubic meter, corrected to 7 percent oxygen (40 CFR §60.33b(a)(3). Compliance must be achieved by August 26, 2002, or 3 years after EPA approval of the Plan, whichever is first.

5. Mercury -- 0.080 milligrams per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85 percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent (40 CFR §60.33b(a)(3)). All designated MWC units for which construction was commenced after June 26, 1987 must comply with mercury and dioxins/furans emission limits within one year following the issuance of new/revised federally enforceable state operating permits (FESOPs) or within 1 year following EPA approval of the State Plan, whichever is later.
6. Sulfur dioxide -- 31 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75 percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with the emission limit is based on a 24-hour daily geometric mean (40 CFR §60.33b(b)(1)(i)).

Sulfur dioxide -- 29 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75 percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with the emission limit is based on a 24-hour daily geometric mean (40 CFR §60.33b(b)(3)(i)). Compliance must be achieved no later than August 26, 2002, or 3 years after EPA approval of the Plan, whichever is first.

7. Hydrogen chloride -- 31 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95 percent reduction by weight or volume) corrected to 7 percent oxygen (dry basis), whichever is less stringent. (40 CFR §60.33b(b)(2)(i)).

Hydrogen Chloride -- 29 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95 percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. (40 CFR §60.33b(b)(3)(ii)). Compliance must be achieved no later than August 26, 2002, or 3 years after EPA approval of the Plan, whichever is first.

8. Dioxins/furans -- 60 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen for electrostatic precipitator based emission control systems (40 CFR §60.33b(c)(1)(i)). For designated facilities not using electrostatic precipitator based emission control systems, the emission limit is 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen. Total mass dioxin/furans includes tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans (40 CFR §60.33b(c)(1)(i) and (ii)). All designated MWC units for which construction was commenced after June 26, 1987 must comply with mercury and dioxins/furans emission limits within one year following the issuance of new or revised FESOPs or within 1 year following EPA approval of State Plan, whichever is later.
9. Nitrogen oxides -- 205 parts per million by volume, corrected to 7 percent oxygen on a dry basis for mass burn waterwall MWC technology.

Nitrogen oxides -- 250 parts per million by volume, corrected to 7 percent oxygen on a dry basis for mass burn rotary waterwall MWC technology.

Nitrogen oxides -- Emissions averaging in accordance with the procedures in 40 CFR §§60.33b(d)(1)(i) through (d)(1)(v) for the following:

Mass burn waterwall technology -- 185 parts per million by volume, corrected to 7 percent oxygen on a dry basis.

Mass burn rotary waterwall technology -- 220 parts per million by volume, corrected to 7 percent oxygen, on a dry basis.

10. Carbon monoxide -- 100 parts per million by volume, corrected to 7 percent on a dry basis for mass burn waterwall technology, and 250 parts per million by volume, corrected to 7 percent on a dry basis for mass burn rotary waterwall technology as required under 40 CFR §§60.34b(a), (Table 3). Averaging times are 4-hours for the mass burn waterwall and 24-hours for the mass burn rotary waterwall combustors technology.

The emission standards and other general requirements for large MWC units are summarized in Appendix C (relating to emission standards and general requirements) and shall apply to all designated large MWCs at all times except during periods of startup, shutdown or malfunction as required under 40 CFR §60.58b(a).

## **B. Other Emission Limitations**

Fugitive Ash Emissions [§60.36b] -- Visible emissions of less than 5 percent of the observation period (i.e., 9 minutes per 3 hour period) as determined by EPA Reference Method 22 as specified in 40 CFR §60.55b. The fugitive ash emission limits include visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

The emission limits required under 40 CFR §60.55b do not apply to visible emissions discharged inside buildings or enclosures of ash conveying systems or during maintenance and repair of ash conveying systems (40 CFR §60.55b (b) and (c)).

**C. Operator Training and Certification [40 CFR §60.35b]**

Section 60.35b provides that a State Plan must include MWC operator training and certification requirements at least as protective as the requirements in 40 CFR §60.54b. Therefore, an owner or operator of a designated MWC facility subject to Subpart Cb shall comply with the standards for MWC operator training and certification according to the schedule set forth in 40 CFR §60.39b(c)(4).

**V. COMPLIANCE SCHEDULE AND INCREMENTS OF PROGRESS**

Owners or operators of large designated MWCs must achieve compliance with the emission limitations according to the compliance schedule prescribed in 40 CFR §60.39b. When a compliance schedule includes compliance dates that extend more than one year beyond the date of the Section 111(d)/129 State Plan, approval of the compliance schedule will include legally enforceable increments of progress.

**A. Compliance Schedule**

i. The following compliance schedule for large MWCs applies to Wheelabrator Falls, American Ref-Fuel, Lancaster Resource Energy, Montenay Energy Resource of Montgomery County, York County Solid Waste and Refuse Authority:

Final Control Plan:	No later than 6 months after PADEP issues FESOP
Award Contract:	No later than 12 months after PADEP issues FESOP or plan approval under 25 Pa. Code Chapter 127, whichever is later
Initiate Construction:	No later than 18 months after PADEP issues FESOP or plan approval under 25 Pa. Code Chapter 127, whichever is later
Complete Construction:	No later than 30 months after PADEP issues FESOP or plan approval under 25 Pa. Code Chapter 127, whichever is later
Final Compliance:	For mercury and dioxins/furans, compliance no later than one year after PADEP issues a new or revised FESOP permits or within 1 year following EPA approval of the MWC State Plan, whichever is

later, for designated MWC units which were constructed after June 26, 1987

For other designated pollutants compliance no later than December 19, 2000, and August 26, 2002 for supplemental limits or 3 years after EPA approval of the Plan, whichever is first

Initial Performance Tests: No later than 180 days after final compliance

Reports of performance data and CEMS data: Annually after compliance date, if in compliance  
Semiannual reporting if emission limits are exceeded

ii. The following compliance schedule applies solely to the Harrisburg Materials, Energy, Recycling and Recovery Facility:

The owner or operator shall achieve compliance with all applicable Subpart Cb requirements on or before December 19, 2000 or cease operation no later than the said date. The owner or operator of the designated facility may not restart any designated MWC unit at the facility until the designated unit has been retrofitted with emissions control equipment capable of meeting all of the emission limitations and operating requirements of 40 CFR Subpart Cb upon startup.

#### **B. Increments of Progress**

At a minimum, final FESOPs, Title V permits or plan approvals issued by PADEP to MWC owners or operators will include the following increments of progress:

1. Submittal of Final Control Plans. [§60.21(h)(1)]
2. Awarding of contracts for control systems or process modifications or orders for purchase of components. [§60.21(h)(2)]
3. Initiation of on-site construction or installation of the air pollution control device(s) or process changes. [§60.21(h)(3)]
4. Completion of on-site construction or installation of control equipment or process changes. [§60.21(h)(4)]
5. Final Compliance. The designated MWCs subject to the Section 111(d)/129 State Plan must comply with the original 1995 Subpart Cb requirements as expeditiously as practicable but no later than December 19, 2000. This compliance deadline applies to 1995 emission limits for lead, sulfur dioxide, hydrogen chloride, and nitrogen oxides. See 62 FR 45117. The MWC owner or operator must comply with the August 25, 1997 supplemental emission limits for lead, sulfur dioxide, hydrogen chloride and nitrogen oxides no later than August 26, 2002 or 3 years after approval of the State Plan by EPA, which ever is earlier. [§60.21(h)(5)]

6. If any designated MWC unit fails to achieve compliance by December 19, 2000, the permittee shall cease operations.

The MWC State Plan will include one set of increments with compliance dates applicable to all large MWC units within Pennsylvania. When necessary, the compliance dates may vary from one MWC unit to another to address specific issues relevant to individual MWC units. The Department will submit a revised State Plan to EPA whenever a FESOP is revised to reflect a compliance schedule other than the schedule set forth in the original State Plan submittal. In all cases, the enforceable increments of progress will be arranged chronologically, and the compliance dates will be set to ensure full compliance with the applicable requirements as expeditiously as practicable (§60.24(c)). If a designated MWC unit fails to meet the above increments of progress for good reason (i.e., act of God, late equipment delivery), the owner or operator of the designated facility shall submit a request for an amended schedule. The request shall include the reasons for failing to meet the increments of progress.

### **C. Plant Closure/Restart**

Designated MWC facilities must achieve compliance with all applicable requirements by December 19, 2000. However, designated facilities have the option of complying with the Subpart Cb requirements or discontinuing operations by the final compliance date. No designated MWC facility or unit may operate in Pennsylvania after December 19, 2000, unless it is equipped with a Department-approved control device capable of meeting the emission standards in Subpart Cb.

Under the provisions of 40 CFR §60.39b, and EPA's July 1996 document entitled, *Municipal Waste Combustion: Summary of the Requirements for Section 111(d)/129 State Plans for Implementing the Municipal Waste Combustor Emission Guidelines*, a State Plan may include provisions for an MWC unit to cease operation and restart as part of its retrofit schedule. In a case where an MWC facility (which may include multiple units) requires such extensive construction that the work cannot be completed within a three-year timeframe, a closure agreement may be included in the plan which would require the unfinished MWC unit(s) to close at the end of three years and not reopen until construction is complete. Performance testing of the unit(s) covered by the closure agreement must be completed within 180 days of reopening.

All designated MWC units which plan to cease operation are required under 40 CFR §60.39b(c) to cease operation within three years following approval of the Section 111(d)/129 State Plan, but no later than December 19, 2000. For MWC units planning to cease operation later than one year after EPA approval of the State Plan, PADEP will submit to EPA a legally enforceable "Closure Agreement." The Closure Agreement, executed between the Department and the owner/operator of the designated MWC units, will include the date operation will cease, and a requirement to submit data from dioxin/furan emission tests per Section 60.39b(c)(2) of Subpart Cb. Any Closure agreement that is not included in the original Section 111(d)/129 State Plan will be submitted to EPA as a revision to the State Plan.

MWC units which plan to restart, may not restart without meeting the requirements of the Emissions Guidelines, Subpart Cb. Prior to restart, all applications, proposed plan approvals, and operating permits issued by the Department for the restarted MWC units will be submitted to EPA for review and approval.

MWC units that have already ceased operations will be identified in the inventory. MWC units that will cease operations within one year of approval of the MWC State Plan will also be identified and the year the unit ceases operations will be specified. If the MWC unit does not cease operation by that date, enforcement action will be taken. Since the inventory is a component of the MWC State Plan, any unit designated to cease operations in the inventory may not operate without a revision to the State Plan and must take actions to achieve compliance with the emission limits. Where MWC units have ceased operation, but will restart, the facility owner or operator must incorporate increments of progress for the unit and complete its air pollution control device retrofits before restarting.

## **VI. INVENTORY OF DESIGNATED FACILITIES [40 CFR §60.25(a)]**

Section 60.25(a) specifies that the State Plan shall include “an inventory of all designated MWC facilities including emissions data for the designated pollutants.” The inventory of existing large designated MWC units in the Commonwealth of Pennsylvania specifies the following MWC plants: Wheelabrator Falls, the Harrisburg Materials, Energy, Recycling and Recovery Facility, American Ref-Fuel Company (formerly Delaware County Resource Recovery Facility), Lancaster Resource Energy, Montenay Energy Resource of Montgomery County, and the York County Solid Waste and Refuse Authority. Large designated MWC facilities are those which have a unit capacity to burn greater than 250 tons per day of municipal solid waste. The designated MWC facilities and their capacities are shown in Appendix D (relating to inventory of large MWC units).

## **VII. EMISSION INVENTORY FOR DESIGNATED FACILITIES [40 CFR §60.25(a)]**

In accordance with Section 60.25(a), the Section 111(d)/129 State Plan must include an emission inventory for all designated pollutants at existing large MWC units regulated under the Subpart Cb requirements. A summary of emissions data for the designated pollutants and the date the emissions were measured is provided in Appendices E-1 through E-6.

The summary of applicable emission standards in Appendix E (relating to emission summaries from large MWC units) and the corresponding measured or estimated emission rates for each of the MWC units covered by this State Plan contains the most recent stack sampling results and sample dates are provided, where available. In cases where no stack test data exists, emission estimates were determined using the estimation methods from EPA’s July 1996 document, *Municipal Waste Combustion: Summary of the Requirements for Section 111(d)/129 State Plans for Implementing the Municipal Waste Combustor Emission Guidelines*. Where emission estimates are used, the word “estimate” appears in place of the stack test date in Appendices E-1 through E-6. Applicable emission standards may vary, depending on the size of the facility and the type of air pollution controls used on the MWC units.

## **Post-1990 Dioxin/Furan Test Data from Large MWC Facilities**

In accordance with 40 CFR 60, Subpart Cb, Appendix F (relating to post 1990 dioxin/furan test data from large MWC units) contains total dioxin/furan emission data for every MWC unit at each large facility that will require more than one year beyond EPA approval of this plan to comply with all of the standards and conditions of Subpart Cb. Section 60.39b(c)(2) provides that “if the State plan requirements for a large municipal waste combustor plant include a compliance schedule longer than one year after approval of the State plan, the State plan submittal shall include performance test results for dioxin/furan emissions for each designated facility that has a compliance schedule longer than 1 year following the approval of the State plan, and the performance test results shall have been conducted during or after 1990.” The performance test must be conducted according to the procedures in Section 60.38b.

The post 1990 dioxins/furans data from the designated facilities are presented in Appendix F. Except for Unit I of the Harrisburg Materials, Energy, Recycling and Recovery Facility, the data represents an average of the post 1990 dioxins/furans emissions. The emissions data is an average of all the unit-by-unit stack tests for a given year.

## **VIII. SOURCE SURVEILLANCE, COMPLIANCE ASSURANCE AND ENFORCEMENT**

The Section 111(d)/129 State Plan must provide for the monitoring of the status of compliance with the emission standards for designated pollutants. 40 CFR §60.25. Owners and operators of designated MWC units must demonstrate compliance with the testing, monitoring, recordkeeping and reporting requirements specified in 40 CFR §§60.38b, 60.39b, 60.58b and 60.59b. The Plan includes the following legally enforceable requirements:

1. Enforceable procedures to require recordkeeping and any additional information to judge compliance. 40 CFR §60.25(b)(1).
2. Provisions for periodic inspection and testing. 40 CFR §60.25(b)(2).
3. Provisions for emission data and other compliance monitoring information correlated with applicable emission standards. 40 CFR §60.25(a) and (c).
4. MWC requirements for testing monitoring recordkeeping and reporting as specified in 40 CFR §§60.38b, 60.39b, 60.58b and 60.59b.
5. Submittal of annual progress reports to EPA in accordance with 40 CFR §§60.25(f)(1) through(6).

### **A. Compliance and Performance Testing [40 CFR §60.38b(b)]**

Except as provided under 40 CFR §60.24(b)(2), the compliance and performance testing requirements applicable to designated MWC units are at least as stringent as the provisions in 40 CFR §60.58b. EPA must approve the use of any equivalent test method in accordance with the

requirements in 40 CFR §60.8(b). Pursuant to §60.38b(b), the alternative performance testing schedule for dioxin/furan specified in 40 CFR §60.58b(g)(5)(iii) shall apply to large municipal waste combustor plants that achieve a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter corrected to 7% oxygen.

### **B. Monitoring Requirements**

The owner or operator of an affected large MWC shall install, calibrate, operate and maintain continuous emission monitors for carbon monoxides, oxygen, opacity, oxides of nitrogen and sulfur dioxide. At a minimum, the MWC owner or operator must:

1. Locate monitors downstream of the final air pollution control device to measure concentrations of oxygen, oxides of nitrogen, oxides of nitrogen and opacity of the exhaust gases. If the percent removal option is to be utilized to show compliance, sulfur dioxide and oxygen monitors must also be located upstream of the pollution control device. Locate monitors at the combustor outlet exit to measure concentrations of carbon monoxide.
2. Install, operate and maintain at a minimum, one temperature monitor to measure the temperature of the flue gas as it enters the particulate matter air pollution control device.

The monitors required by Subpart Cb must meet the performance specifications in 40 CFR Part 60, Appendix B, the quality assurance procedures in 40 CFR Part 60, Appendix F, and the specifications in 40 CFR §60.58b (relating to compliance and performance testing). In addition, the monitors must also meet the installation, certification, reporting, recordkeeping and the applicable requirements in 25 Pa. Code §§139.101 (relating to general requirements), 139.103 (relating to opacity monitoring requirements), 139.104 (relating to sulfur dioxide and nitrogen oxides monitoring requirements for combustion sources) and 139.111 (relating to municipal waste incinerator monitoring requirements).

### **C. Recordkeeping and Reporting**

In order to be approved by EPA the Section 111(d)/129 State Plan must include legally enforceable procedures to require MWC owners or operators to maintain records and to periodically report to PADEP the “nature and amount of emissions” from the designated facilities. For compliance purposes, owners or operators of designated MWC units must maintain records and provide reports in accordance with the requirements in 40 CFR §60.59(b) as applicable, except for the siting requirements in 40 CFR §§60.59b (a), (b)(5), and (d)(11).

### **D. Annual Progress Reports**

Subsection 60.25(e) requires States to submit reports on progress in plan enforcement to the EPA Administrator on an annual basis, beginning with the first full report period after EPA approval of the MWC State Plan. The progress report must be included the reports submitted in accordance with the CFR §51.32. The annual progress report will describe PADEP’s progress in the enforcement of the State plan. 40 CFR §60.25(e). The first progress report will be submitted to EPA one year after approval of the Commonwealth’s Section 111(d)/129 State Plan

for existing MWCs. At a minimum, the annual progress report will include the following elements required under 40 CFR §60.25(f):

1. Enforcement actions initiated against a designated facility during the reporting period for the calendar year.
2. Identification of the achievement of any increments of progress required by the plan.
3. If applicable, identity of designated facilities that have ceased operation during the reporting period.
4. Submission of additional emission data to update previous progress reports.
5. Submission of copies of technical reports on all performance testing conducted on designated facilities, complete with concurrently recorded process data.

**IX. LEGAL AUTHORITY TO IMPLEMENT THE SECTION 111(d)/129 STATE PLAN  
[40 CFR §60.26(a)]**

Pursuant to 40 CFR §60.26, State Plans must show that States have legal authority to carry out the plan including the authority to [a]dopt emission standards and compliance schedules applicable to designated facilities and to enforce applicable laws, regulations, standards, compliance schedules and seek injunctive relief. The legal opinion, attached hereto as Appendix G (relating to legal authority to implement the State Plan) demonstrates that PADEP has sufficient statutory and regulatory authority under its plan approval, State operating permit and Title V permit programs to implement applicable requirements adopted under Sections 111(d) and 129 of the Clean Air Act, including those for municipal waste combustors (MWCs). A copy of the Commonwealth's Air Pollution Control Act (35 P.S. §4001 *et. seq.*) and applicable regulations in 25 Pa. Code Article III (relating to air resources) for the plan approval, State operating permit and Title V permit requirements is attached hereto as Appendix H (relating to the Air Pollution Control Act and applicable permitting regulations).

**Appendix A: Emission Guidelines for Existing Municipal Waste Combustors  
(MWCs) (40 CFR Part 60, Subpart Cb)**

**AND**

**New Source Performance Standards for New Municipal Waste Combustors  
(MWCs) (40 CFR Part 60, Subpart Eb)**

**(NOT INCLUDED)**

## **Appendix B -2: Public Hearing Certification**

I, \_\_\_\_\_, on behalf of the Commonwealth of Pennsylvania, Department of Environmental Protection, hereby certify that two public hearings were held prior to adoption of the Section 111(d)/129 State Plan for large Municipal Waste Combustors (MWCs) in accordance with criteria specified in 40 CFR §60.23. I further certify that the MWC State Plan includes a list of persons who provided testimony at the hearings and written copies of their testimony.

Dated: \_\_\_\_\_

Signed: \_\_\_\_\_

Krishnan Ramamurthy, Chief  
Technical Support Section  
Permits Division  
Bureau of Air Quality, PADEP

## Appendix C: Emission Standards And General Requirements

Pollutant or Parameter	Emission Limit for a Large MWC	Performance and Compliance Test Requirements
Opacity	10 percent (6-minute average)	CEMS
Carbon Monoxide*	100 ppmv - 4-hour block arithmetic average MB/WW	CEMS
	250 ppmv - 24-hour daily arithmetic average MB/RW	CEMS
Particulate Matter*	27 mg/dscm (0.012gr/dscf)	Annual test
Nitrogen Oxides*	205 ppmv 24 hour arithmetic average. MB/WW	CEMS (only for sources to which emission standard applies)
	250 ppmv 24 hour arithmetic average. MB/RW	CEMS (only for sources to which emission standard applies)
Hydrogen Chloride*	31 ppmv and 29 ppmv or 95 percent reduction by 8/25/2002	Annual test
Sulfur Dioxide*	31 ppm 24 hr geometric mean or 75 percent reduction; 29 ppmv -8/25/2002	Annual test
Cadmium*	0.040 mg/dscm	Annual test
Lead*	0.49 mg/dscm and 0.44 mg/dscm by 8/25/2002	Annual test
Mercury*	0.080 mg/dscm or 85% reduction	Annual test
Total Dioxin/Furans*	60 ng/dscm (total mass) for ESP based control device.	Annual test
	30 ng/dscm (total mass) for non ESP based control device.	Annual test
Load	Not to exceed 110 percent of maximum load during most recent dioxin/furan performance test.	Continuous monitoring - 4 hr block arithmetic average steam load.
Temperature	The maximum particulate matter control device inlet temperature must not exceed more than 17° C the temperature during the most recent dioxin/furan test.	Continuous monitoring

Notes:

\* All emission limits are expressed at 7 percent oxygen, dry basis.

“MB/WW” means Mass Burn Waterwall

“MB/RW” means Mass Burn Rotary Waterwall

CEMS means Continuous Emission Monitoring System

## Appendix D: Inventory of Large MWC Units

Facility Name	County	Unit	Capacity (TPD) <sup>a</sup>	Unit Type <sup>b</sup>	Air Pollution Control <sup>c</sup>
Wheelabrator Falls Inc. (09-0013)	Bucks	1	750	MB/WW	SD, FF, CI, SNCR
		2	750	MB/WW	SD, FF, CI, SNCR
Harrisburg Materials (22-2007)	Dauphin	1	360	MB/WW	ESP
		2	360	MB/WW	ESP
American Ref-Fuel Company (Formerly Delaware County Resource Recovery Facility) (23-0004)	Delaware	1	448	MB/RW	SD, FF
		2	448	MB/RW	SD, FF
		3	448	MB/RW	SD, FF
		4	448	MB/RW	SD, FF
		5	448	MB/RW	SD, FF
		6	448	MB/RW	SD, FF
Lancaster Resource Energy, Inc. (36-2013)	Lancaster	1	400	MB/WW	FF, SD, LI
		2	400	MB/WW	FF, SD, LI
		3	400	MB/WW	FF, SD, LI
Montenay Montgomery Ltd. (46-0010)	Montgomery	1	600	MB/WW	FF, SD
		2	600	MB/WW	FF, SD
York County Solid Waste & Resource Authority (67-2006)	York	1	448	MB/RW	FF, SD, CI <sup>d</sup>
		2	448	MB/RW	FF, SD, CI <sup>d</sup>
		3	448	MB/RW	FF, SD, CI <sup>d</sup>

Notes:

<sup>a</sup> The capacity is expressed in Tons Per Day (TPD) of refuse

<sup>b</sup> Mass Burn/Waterwall (MB/WW)  
Mass Burn/Rotary Waterwall (MB/RW)

<sup>c</sup> The Air Pollution Controls (APC) listed are:

Electrostatic Precipitator (ESP)

Fabric Filter (FF)

Spray Dryer (SD) "Scrubber"

Selective Non-Catalytic Reduction (SNCR)

Carbon Injection (CI)

Lime Injection (LI)

<sup>d</sup> Carbon injection commenced in February 1997

**Appendix E-1: Summary Of Emissions From Wheelabrator Falls Inc., For  
The Year 1997**

Unit	Type	Size	Hrs/vr	Pollutant	Emission Rate	Emission tpy	Emission Det.
1	MB/WW	750 tpd	8,332	Carbon Monoxide	26.675 ppm	47.086	CEMS
				Particulate Matter	0.00338 gr/dscf*	3.46	Stack test
				Nitrogen Oxides	173.038 ppm	501.79	CEMS
				Hydrogen Chloride	5.989 ppmv	13.78	CEMS
				Sulfur Dioxide	15.722 ppm	63.43	CEMS
				Cadmium	0.389 ug/dscm*	0.000466	Stack test
				Lead	1.815 ug/dscm*	0.00223	Stack test
				Mercury	23.0 ug/dscm*	0.0285	Stack test
				Total Dioxin/Furan	0.977 ng/dscm	1.146 E-6	Stack test
2	MB/WW	750 tpd	8,323	Carbon Monoxide	25.937 ppm	44.45	CEMS
				Particulate Matter	.00383 gr/dscf*	5.55	Stack test
				Nitrogen Oxides	172.703 ppm	486.27	CEMS
				Hydrogen Chloride	6.17 ppmv	24.04	CEMS
				Sulfur Dioxide	17.763 ppm	69.59	CEMS
				Cadmium	2.558 ug/dscm*	0.00302	Stack test
				Lead	31.515 ug/dscm*	0.0377	Stack test
				Mercury	8.695 ug/dscm*	0.01038	Stack test
				Total Dioxin/Furan	1.59 ng/dscm	1.93 E-6	Stack test

Stack tests conducted on August 11-15, 1997 and February 11-13, 1997

CEMS = Continuous Emission Monitoring System

All emission limits are expressed at 7 percent oxygen, dry basis

\* Average emission rate of two stack tests

tpd = tons per day

tpy = tons per year

**APPENDIX E-2: Summary of Emissions from Harrisburg Materials, Energy, Recycling, Resource and Recovery Facility**

Unit	Type	Size	Hrs/yr	Pollutant	Emission Rate	Emission tpy	Emission Det
1	MB/WW	360 tpd	8784	Carbon Monoxide	7.60 lbs/hr	33.50	1996 AIMS
				Particulate Matter	2.90 lbs/hr	12.8	1996 AIMS
				Nitrogen Oxides	35.70 lbs/hr	157.1	1996 AIMS
				Hydrogen Chloride	--	382.8	AP-42
				Sulfur Dioxide	27.90 lbs/hr	122.9	1996 AIMS
				Cadmium	--	0.039	AP-42
				Lead	--	0.30	1996 AIMS
				Mercury	--	0.10	1996 AIMS
				Total Dioxin/Furan	1157 ng/dscm	4.78 E-4	June 1994
2	MB/WW	360 tpd	6784	Carbon Monoxide	10.60 lbs/hr	36.00	1996 AIMS
				Particulate Matter	4.06 lbs/hr	13.80	1996 AIMS
				Nitrogen Oxides	59.10 lbs/hr	200.6	1996 AIMS
				Hydrogen Chloride	--	294.7	AP-42
				Sulfur Dioxide	38.90 lbs/hr	132.1	1996 AIMS
				Cadmium	--	0.03	AP-42
				Lead	--	0.30	1996 AIMS
				Mercury	--	0.01	1996 AIMS
				Total Dioxin/Furan	7074 ng/dscm	2.40 E-3	July 1996

All emission limits are expressed at 7 percent oxygen, dry basis

lbs/hr = pounds per hour

tpd = tons per day

tpy = tons per year

**APPENDIX E-3: Summary of Emissions from American Ref-Fuel Company  
for the Year 1997**

Unit	Type	Size	Hrs/yr	Pollutant	Emission Rate	Emission ton	Emission det.
1	MB/WW	448 tpd	7,525	Carbon Monoxide	50.654 ppmv	49.98	CEMS
				Particulate Matter	0.0026 gr/dscf	4.4	Stack Test
				Nitrogen Oxides	125.336 ppmv	203.18	CEMS
				Hydrogen Chloride	8.077 ppmv	10.39	CEMS
				Sulfur Dioxide	21.157 ppmv	47.71	CEMS
				Cadmium	<0.102 ug/dscm	<0.000074	Stack Test
				Lead	1.44 ug/dscm	0.0011	Stack Test
				Mercury	16.9 ug/dscm	0.0123	Stack Test
				Total Dioxin/Furan	1.19 ng/dscm	1.009 E-6	Stack Test
2	MB/WW	448 tpd	7,141	Carbon Monoxide	57.144 ppmv	49.86	CEMS
				Particulate Matter	0.0015 gr/dscf	2.39	Stack Test
				Nitrogen Oxides	126.816 ppmv	181.77	CEMS
				Hydrogen Chloride	9.878 ppmv	11.23	CEMS
				Sulfur Dioxide	21.991 ppmv	43.86	CEMS
				Cadmium	<0.104 ug/dscm	<0.000068	Stack Test
				Lead	2.27 ug/dscm	0.0015	Stack Test
				Mercury	11.7 ug/dscm	0.0077	Stack Test
				Total Dioxin/Furan	2.19 ng/dscm	1.64 E-6	Stack Test
3	MB/WW	448 tpd	7,085	Carbon Monoxide	51.184 ppmv	46.68	CEMS
				Particulate Matter	0.011 gr/dscf	2.16	Stack Test
				Nitrogen Oxides	123.840 ppmv	185.55	CEMS
				Hydrogen Chloride	4.250 ppmv	5.05	CEMS
				Sulfur Dioxide	20.528 ppmv	42.79	CEMS
				Cadmium	<0.213 ug/dscm	<0.000136	Stack Test
				Lead	1.79 ug/dscm	0.0114	Stack Test
				Mercury	24.9 ug/dscm	0.0163	Stack Test
				Total Dioxin/Furan	0.744 ng/dscm	5.83 E-7	Stack Test

**APPENDIX E-3(Continued): Summary of Emissions from American Ref-Fuel  
Company for the Year 1997**

Unit	Type	Size	Hrs/yr	Pollutant	Emission Rate	Emission tpy	Emission Det.
4	MB/WW	448 tpd	7,398	Carbon Monoxide	50.919 ppmv	46.03	CEMS
				Particulate Matter	0.0033 gr/dscf	4.88	Stack Test
				Nitrogen Oxides	136.085 ppmv	202.08	CEMS
				Hydrogen Chloride	6.018 ppmv	7.09	CEMS
				Sulfur Dioxide	20.641 ppmv	42.64	CEMS
				Cadmium	<0.113ug/dscm	<0.000072	Stack Test
				Lead	1.25 ug/dscm	0.00079	Stack Test
				Mercury	26.5 ug/dscm	0.0167	Stack Test
				Total Dioxin/Furan	2.72 ng/dscm	2.11 E-6	Stack Test
5	MB/WW	448 tpd	7,032	Carbon Monoxide	46.824 ppmv	45.54	CEMS
				Particulate Matter	0.0015 gr/dscf	2.18	Stack Test
				Nitrogen Oxides	129.690 ppmv	207.25	CEMS
				Hydrogen Chloride	7.727 ppmv	9.79	CEMS
				Sulfur Dioxide	22.298 ppmv	49.57	CEMS
				Cadmium	<0.107 ug/dscm	0.00007	Stack Test
				Lead	1.88 ug/dscm	0.0012	Stack Test
				Mercury	16.1 ug/dscm	0.0104	Stack Test
				Total Dioxin/Furan	28.6 ng/dscm	2.39 E-5	Stack Test
6	MB/WW	448 tpd	6,984	Carbon Monoxide	61.793 ppmv	62.33	CEMS
				Particulate Matter	0.0028 gr/dscf	4.43	Stack Test
				Nitrogen Oxides	129.156 ppmv	214.04	CEMS
				Hydrogen Chloride	10.228 ppmv	13.45	CEMS
				Sulfur Dioxide	17.252 ppmv	39.78	CEMS
				Cadmium	1.3 ug/dscm	0.00091	Stack Test
				Lead	0.931 ug/dscm	0.00065	Stack Test
				Mercury	12.7 ug/dscm	0.0089	Stack Test
				Total Dioxin/Furan	16.0 ng/dscm	1.39 E-5	Stack Test

Stack test conducted on May 6-22, 1997

CEMS = Continuous Emission Monitoring System

tpd = tons per day

tpy = tons per year

**APPENDIX E-4: Summary of Emissions from Lancaster Resource Energy, Inc.,  
for the Year 1997**

Unit	Type	Size	Hrs/vr	Pollutant	Emission Rate	Emission tpy	Emission Det.
1	MB/WW	400 tpd	8,247	Carbon Monoxide	14.249 ppmv	16.24	CEMS
				Particulate Matter	0.00365 gr/dscf*	5.57	Stack
				Nitrogen Oxides	269.000 ppmv	503.58	CEMS
				Hydrogen Chloride	15.275 ppmv	22.69	CEMS
				Sulfur Dioxide	6.741 ppmv	17.56	CEMS
				Cadmium	2.115 ug/dscm*	1.37 E-3	Stack
				Lead	39.88 ug/dscm*	2.89 E-2	Stack
				Mercury	72.38 ug/dscm*	4.81 E-2	Stack
				Dioxin/Furan	0.60 ng/Nm3**	1.37 E-7	Stack
2	MB/WW	400 t/d	8,034	Carbon Monoxide	16.855 ppmv	20.04	CEMS
				Particulate Matter	0.003 gr/dscf*	4.13	Stack
				Nitrogen Oxides	267.271 ppmv	522.02	CEMS
				Hydrogen Chloride	5.006 ppmv	7.76	CEMS
				Sulfur Dioxide	3.242 ppmv	8.81	CEMS
				Cadmium	0.818 ug/dscm*	3.42 E-5	Stack
				Lead	11.365 ug/dscm*	1.21 E-3	Stack
				Mercury	39.60 ug/dscm*	5.10 E-2	Stack
				Dioxin/Furan	0.085 ng/Nm3**	2.39 E-8	Stack
3	MB/WW	400 tpd	8,094	Carbon Monoxide	14.820 ppmv	17.19	CEMS
				Particulate Matter	0.0049 gr/dscf	1.44	Stack
				Nitrogen Oxides	267.937 ppmv	510.48	CEMS
				Hydrogen Chloride	14.940 ppmv	22.59	CEMS
				Sulfur Dioxide	5.622 ppmv	14.90	CEMS
				Cadmium	0.375 ug/dscm*	1.03 E-4	Stack
				Lead	2.85 ug/dscm*	4.89 E-3	Stack
				Mercury	37.02 ug/dscm*	3.56 E-2	Stack
				Dioxin/Furan	0.052 ng/Nm3**	3.15 E-8	Stack

Stack tests conducted on May 5-14, 1997 and November 3-7, 1997

All emission limits are expressed at 7 percent oxygen, dry basis.

\* Average emissions rate of two stack tests

\*\* 1989 EPA Toxic Equivalencies expressed (TEQ)

30 ng/dscm total mass = 0.5 ng/dscm dioxin/furan TEQ

CEMS = Continuous Emission Monitoring System

tpd = tons per day

tpy = tons per year

**APPENDIX E-5: Summary of Emissions from Montenay Energy Resources of  
Montgomery County Inc., for the Year 1997**

Unit	Type	Size	Hrs/vr	Pollutant	Emission Rate	Emission tpy	Emission Det.
1	MB/WW	600 tpd	8,005	Carbon Monoxide	22.645 ppmv	29.11	CEMS
				Particulate Matter	0.00068 gr/dscf	1.37	Stack Test
				Nitrogen Oxides	249.557 ppmv	527.01	CEMS
				Hydrogen Chloride	25.399 ppmv	45.52	CEMS
				Sulfur Dioxide	9.874 ppmv	29.01	CEMS
				Cadmium	1.15 ug/dscm	0.00102	Stack Test
				Lead	4.41 ug/dscm	0.00388	Stack Test
				Mercury	45.0 ug/dscm	0.0397	Stack Test
				Total Dioxin/Furan	2.25 ng/Nm3	1.97 E-6	Stack Test
2	MB/WW	600 tpd	7,971	Carbon Monoxide	20.515 ppmv	26.26	CEMS
				Particulate Matter	0.00054 gr/dscf	1.112	Stack Test
				Nitrogen Oxides	241.155 ppmv	507.06	CEMS
				Hydrogen Chloride	24.537 ppmv	40.94	CEMS
				Sulfur Dioxide	7.470 ppmv	21.85	CEMS
				Cadmium	<1.07 ug/dscm	<0.0095	Stack Test
				Lead	2.92 ug/dscm	0.0026	Stack Test
				Mercury	60.0 ug/dscm	0.055	Stack Test
				Total Dioxin/Furan	1.81 ng/Nm3	1.59 E-6	Stack Test

Stack test conducted on May 6-13, 1997

All emission limits are expressed at 7 percent oxygen, dry basis

CEMS = Continuous Emission Monitoring System

tpd = tons per day

tpy = tons per year

**APPENDIX E-6: Summary of Emissions from York County Solid waste & Refuse Authority, for the Year 1997**

Unit	Type	Size	Hrs/vr	Pollutant	Emission Rate	Emission tpy	Emission Det.
1	MB/WW	448 tpd	7,870	Carbon Monoxide	63.007 ppmv	73.29	CEMS
				Particulate Matter	0.0013 gr/dscf	2.97	Stack test
				Nitrogen Oxides	95.775 ppmv	183.04	CEMS
				Hydrogen Chloride	4.321 ppmv	6.552	CEMS
				Sulfur Dioxide	12.189 ppmv	32.41	CEMS
				Cadmium	0.924 ug/dscm*	0.000923	Stack test
				Lead	4.153 ug/dscm*	0.00419	Stack test
				Mercury	4.716 ug/dscm*	0.00474	Stack test
				Total Dioxin/Furan	2.33 ng/dscm(av)	1.826 E-6	Stack test
				2	MB/WW	448 tpd	8,059
Particulate Matter	0.008 gr/dscf	4.65	Stack Test				
Nitrogen Oxides	117.763 ppmv	194.45	CEMS				
Hydrogen Chloride	5.638 ppmv	7.717	CEMS				
Sulfur Dioxide	5.786 ppmv	13.88	CEMS				
Cadmium	0.543 ug/dscm*	0.000489	Stack test				
Lead	1.791 ug/dscm*	0.00161	Stack test				
Mercury	14.925 ug/dscm*	0.0135	Stack test				
Total Dioxin/Furan	1.114 ng/dscm(av)	7.97 E-7	Stack test				
3	MB/WW	448 tpd	7,843				
				Particulate Matter	0.0047 gr/dscf	2.85	Stack Test
				Nitrogen Oxides	108.209 ppmv	197.17	CEMS
				Hydrogen Chloride	5.811 ppmv	8.401	CEMS
				Sulfur Dioxide	4.963 ppmv	12.58	CEMS
				Cadmium	0.4595 ug/dscm*	0.000426	Stack test
				Lead	1.931 ug/dscm*	0.00185	Stack test
				Mercury	27.30 ug/dscm*	0.0275	Stack test
Total Dioxin/Furan	1.909 ng/dscm(av)	1.23 E-6	Stack test				

Stack tests conducted on March 25-28, 1997, and September 21-23,1997

All emission limits are expressed at 7 percent oxygen, dry basis

\* Average emission rates of two stack tests

CEMS = Continuous Emission Monitoring System

dscf/min = dry standard cubic feet per minute

tpd = tons per day

tpy = tons per year

**APPENDIX F: Post 1990 Dioxin/Furan Test Data From Large Existing MWC Units**

<b>Facility Name</b>	<b>Unit</b>	<b>Emission Rate<sup>a</sup></b>	<b>Date Measured</b>
Wheeler Falls Inc. (09-0013)	1	0.977 ng/dscm	August 13, 1997
	2	1.59 ng/dscm	August 13, 1997
The Harrisburg Materials, Energy, Recycling Resource and Recovery Facility (22-2007)	1	1157 ng/dscm	June 1-2, 1994
	2	7074 ng/dscm	July 24-25, 1996
	1	321 ng/dscm**	November 12-13, 1997
	2	588 ng/dscm**	September 15-16, 1997
American Ref-Fuel. (Formerly Delaware County Resource Recovery Facility) (23-0004)	1	1.19ng/dscm	May 15-16, 1997
	2	2.19 ng/dscm	May 21, 1997
	3	0.744 ng/dscm	May 16, 19, 1997
	4	2.72 ng/dscm	July 24, 30, 1997
	5	28.60 ng/dscm	May 19, 21, 1997
	6	16.0 ng/dscm	May 15-16,1997
Lancaster County Solid Waste Management Authority (36-2013)	1	0.60 ng/Nm3*	May 6-7, 1997
	2	.085 ng/Nm3*	May 8, 1997
	3	.053 ng/Nm3*	May 9-12, 1997
Montenay Montgomery Ltd. (46-0010)	1	2.25 ng/Nm3	May 6-8, 1997
	2	1.91 ng/Nm3	May 6-7, 1997
York County Solid Waste & Recovery Authority (67-2006)	1	2.33 ng/dscm	March 25, 1997
	2	1.114 ng/dscm	March 25, 1997
	3	1.909 ng/dscm	March 28, 1997

Note:

<sup>a</sup> All emission limits are expressed at 7 percent oxygen, dry basis

“ng/dscm” means nanograms per dry standard cubic meter

\* 1989 EPA Toxic Equivalencies (TEQ)

\*\* Test results were not reviewed by the Department

30 ng/dscm total mass = 0.5 ng/dscm dioxin/furan TEQ

## **Appendix G: Legal Authority To Implement The State Plan**

## APPENDIX G

### **LEGAL AUTHORITY TO IMPLEMENT THE STATE PLAN [40 CFR §60.26(a)]**

Pursuant to 40 CFR §60.26, State Plans must show that States have legal authority to carry out the plan including the authority to [a]dopt emission standards and compliance schedules applicable to designated facilities and to enforce applicable laws, regulations, standards, compliance schedules and seek injunctive relief.

It is my opinion that PADEP has sufficient statutory and regulatory authority under its plan approval, State operating permit and Title V permit programs to implement applicable requirements adopted under Sections 111(d) and 129 of the Clean Air Act, including those for municipal waste combustors (MWCs) and MSW landfills. A copy of the Commonwealth's Air Pollution Control Act (35 P.S. §4001 et seq.) and applicable regulations in 25 Pa. Code Article III (relating to air resources) for the plan approval, State operating permit and Title V permit requirements is attached hereto as Appendix H.

#### **A. Adoption of Emission Standards and Compliance Schedules**

Pennsylvania's Air Pollution Control Act and regulations promulgated thereunder provide authority for the PADEP to issue plan approvals, state operating permits and Title V permits to air contamination sources which incorporate "applicable requirements" and ensure compliance with "applicable requirements" of the CAA and regulations adopted under the act. The term "applicable requirements" as defined in 25 Pa. Code §121.1 includes requirements which apply to a source at a Title V facility including a standard or other requirement under Section 111 of the CAA including subsection (d) and a standard or other requirement governing solid waste incineration under Section 129 of the Clean Air Act. The Emission Guidelines for MWCs and MSW landfills are applicable requirements under state law.

Pursuant to Section 6.1(a) of the APCA, no person can construct, assemble, install or modify an air contamination source nor install thereon an air pollution control device unless the person has obtained written approval from the PADEP. 35 P.S. §6006.1(a). In addition, an applicant for a plan approval must demonstrate that the source will comply with applicable requirements of 25 Pa. Code Article III and requirements promulgated by the EPA under the CAA. These statutory and regulatory requirements provide the necessary authority to incorporate the applicable requirements for designated facilities including MSW landfills and MWCs directly into plan approvals required under 25 Pa. Code §127.11 (relating to plan approvals).

Section 6.1(b) of the APCA provides that no person can operate any air contamination source unless the PADEP has issued to the source an operating permit in response to a written application to operate such sources. 35 P.S. §4006.1. This statutory requirement implements the permitting requirements in 25 Pa. Code §§127.401-127.465 (relating to operating permit requirements) and 25 Pa. Code §§127.501-127.543 (relating to Title V Operating Permit requirements).

An applicant for a State operating permit or Title V permit must demonstrate that the source is complying with applicable requirements of 25 Pa. Code Article III (relating to air resources) and requirements promulgated under the CAA by the Administrator of the EPA. 25 Pa. Code §127.411(a)(5). Section 127.411(a)(12) requires that operating permit applications contain a completed compliance review form or the applicant must provide a reference for the most recent compliance review form for facilities submitting compliance review forms on a periodic basis. Each permit issued by the PADEP must, at a minimum, incorporate by reference the emission and performance standards and other requirements of the APCA, the CAA or the regulations promulgated under either act. The provisions of 25 Pa. Code Chapter 127, Subchapter F (relating to operating permit requirements) are incorporated into the Title V permit requirements in 25 Pa. Code Chapter 127, Subchapter G (relating to Title V operating permits). Section 127.501 provides that Subchapter G "... describes the additional operating permit program requirements applicable to Title V facilities which are in addition to the requirements in Subchapter F ...".

Section 6.1(b) of the APCA and implementing regulations authorize the PADEP to issue permits to noncomplying air contamination sources and to include in the plan approval or operating permit a schedule to achieve compliance with all applicable requirements of the CAA and the regulations promulgated under the CAA no later than the time frame specified by federal law. 35 P.S. §§4006.1(b)(3-4), 4007.2 and 25 Pa. Code §§127.403(c), 127.404, 127.411 and 127.445(a)-(f).

Additional statutory authority for the incorporation of applicable requirements into permits for designated facilities is derived from Section 6.1(k) of the APCA. This provision authorizes the Department to revise any permit to incorporate applicable standards and regulations promulgated under the CAA after issuance of such permit. 35 P.S. §4006.1(k). The implementing regulations are codified at 25 Pa. Code §§127.461, 127.463 and 127.542.

## **B. Enforcing Applicable Laws, Regulations, Standards, and Compliance Schedules**

The PADEP has sufficient authority to enforce applicable requirements including Sections 111(d) and 129 of the CAA. Section 7.1 of the APCA establishes a mandatory bar to the issuance of plan approvals or permits if the PADEP finds that a permittee has been placed on the Department's compliance docket for violations of any requirement of the APCA and regulations adopted thereunder, any plan approval, permit or order of the Department. 35 P.S. §4007.1.

Section 7.2 of the APCA provides that permits issued to sources out of compliance with the APCA, the CAA or regulations promulgated under either act "must contain an enforceable schedule requiring the source to attain compliance." If the permittee fails to achieve compliance by the final compliance date, the permit shall terminate. 35 P.S. §4007.2.

Section 8 of the APCA provides that it shall be unlawful to fail to comply with the act, regulations adopted under the Act or fail to comply with any order of the Department, or any term or condition of a plan approval or permit. 35 P.S. §4008.

In addition, Pennsylvania law provides civil and criminal enforcement authority for violations of the APCA, regulations including the assessment of penalties and fines under Sections 9 and 9.1 of the APCA. Under Section 9.1(a), the PADEP may assess a civil penalty of up to \$25,000 per day for each violation of applicable requirements. 35 P.S. §§4009, 4009.1.

Section 10.1 of the APCA also authorizes the PADEP to issue enforcement orders to aid in the enforcement of the provisions of the Act or its implementing regulations. Such orders shall include orders modifying, suspending, terminating, or revoking a Plan Approval or Operating Permit. 35 P.S. §4010.1.

### **C. Seeking Injunctive Relief**

Section 13 of the APCA specifies that a violation of the act or regulations, any order, plan approval or permit is a public nuisance and allows for the abatement of public nuisances. 35 P.S. §4013.

Section 13.6 of the APCA authorizes the PADEP to abate nuisances in the manner provided by law or equity for the abatement of public nuisances. When circumstances warrant or public health is endangered, a mandatory preliminary injunction, special injunction or temporary restraining order may be issued upon the terms of prescribed by the court. In such proceedings, upon a motion of the Commonwealth, the court shall issue a prohibitory or mandatory preliminary injunction if it finds that the defendant is engaged in unlawful conduct as defined by the APCA or is engaged in conduct which is causing immediate or irreparable harm. The court may also levy penalties in accordance with Section 9.1 of the APCA. See 35 P.S. §4013.

### **D. Obtaining Information Necessary to Determine Whether Designated Facilities are in Compliance with Applicable Requirements.**

As required under 40 CFR §60.26(a)(3), the PADEP may obtain information necessary to determine compliance with applicable laws, regulations, standards and compliance schedules. Section 7.1 of the APCA requires the Department to withhold a plan approval or permit if the applicant, permittee or a general partner, parent or subsidiary corporation of the applicant or permittee is in violation of the APCA, regulations adopted thereunder, a plan approval, permit or order of the Department. 35 P.S. §4007.1.

The owners or operators of designated facilities, including MSW landfills with design capacities of 2.5 million megagrams, must comply with the compliance review procedures established in 25 Pa. Code §127.412 and the compliance certification requirements established in 25 Pa. Code §§127.503, 127.512 and 127.513.

Section 127.412(c) requires that the compliance review form submitted to the Department include information related to compliance status of the applicant and “related parties. The compliance review form must include a list of “documented conduct” and “deviations” by the plan approval or permit applicant or a “related party.” The applicant or related party is required

to update the compliance review form. Subsection (e) provides that the Department may establish a supplemental review form that may be used to update information submitted to the Department on the compliance review form. 25 Pa. Code §127.412(e). In addition, subsection (k) requires the owners and operators of designated facilities to have reasonable procedures in place to insure that documented conduct and deviations are identified and made part of the compliance review information submitted to the Department. 25 Pa. Code §127.412(k).

Compliance certification provisions established under §127.503 include:

1) certification by a responsible official that the facility is in compliance with applicable requirements or certification of compliance with “applicable requirements;”

2) a schedule for submission of compliance certification during the permit term, to be submitted at least annually or more frequently if specified by the applicable requirement or by the Department. 25 Pa. Code §127.503(10).

Section 127.512(c)(5) provides that Title V permits shall require each permittee to furnish to the Department within a reasonable time, information that the Department may request in writing to determine whether cause exists for modifying, revoking and reissuing or terminating the permit or to determine compliance with the permit.

In accordance with §127.513, permits issued to Title V facilities must specify that upon presentation of credentials and other documents required by law, the permittee shall allow the PADEP or an authorized representative of the PADEP access to such facilities to inspect, at reasonable times, facilities and equipment including monitoring and air pollution control equipment. 25 Pa. Code §127.513(2)(iii). The Department also has authority to sample or monitor substances or parameters for the purpose of assuring compliance with the terms of the permit or applicable requirements as authorized under the CAA, the APCA, or the regulations adopted under the acts. 25 Pa. Code §127.513(2)(iv).

**E. Requiring Owners or Operators to Install Maintain and Use Emission Monitoring Devices and Make Periodic Reports**

In accordance with §127.12(a)(3), plan approval applications must show that the source will be equipped with reasonable and adequate facilities to monitor and record the emissions of air contaminants and operating conditions which may affect the emissions of air contaminants. The applicant must also show that the records are being and will continue to be maintained and that the records will be submitted to the Department at specified intervals or upon request. 25 Pa. Code §127.12(a)(3).

Section 127.411(4)(i) provides that an applicant for an operating permit must demonstrate that the source is equipped with reasonable and adequate facilities to monitor and record the emissions of air contaminants and the operating conditions which may affect the emissions of air contaminants. 25 Pa. Code §127.411(a)(4)(i).

Section 127.441(a) provides that a permit may contain terms and conditions that the PADEP deems necessary to assure the proper operation of the source. Subsection (c) specifies that “the operating permit shall incorporate the monitoring, recordkeeping and reporting requirements required by 25 Pa. Chapter 139 (relating to sampling and testing) and other requirements” of 25 Pa. Code Article III. This subsection also provides that operating permits shall incorporate additional requirements related to the monitoring, recordkeeping and reporting required by the Clean Air Act and the regulations thereunder.” 25 Pa. Code §127.441(c). These requirements must be included in both State operating permits and Title V permits issued by the PADEP. Therefore, Pennsylvania has adequate authority to include the monitoring, recordkeeping and reporting requirements for designated facilities in State operating permits and Title V permits.

In addition, Section 127.442 provides that the permittee shall submit reports to the PADEP containing information prescribed by the PADEP relative to the operation and maintenance of a source. At a minimum, each permit shall incorporate by reference the requirements of the APCA, the Clean Air Act, or applicable regulations adopted thereunder.

Pursuant to 25 Pa. Code §127.511(a), emission monitoring and analysis procedures or test methods required under applicable requirements, including procedures and methods under Sections 114(a)(3) or 504(b) of the Clean Air Act must be included as a condition in Title V permits. With respect to emission monitoring, the permittee must also comply with requirements concerning the use, maintenance and, when appropriate, installation of monitoring equipment or methods, as necessary. 25 Pa. Code §127.511(a)(3). At least every six months, the permittee must submit reports of required monitoring, certified by a responsible official of the designated facility. Instances of deviations from permit requirements shall be clearly identified in the reports. 25 Pa. Code §127.511(c).

The previously described statutory and regulatory provisions demonstrate that PADEP has adequate authority to require the owners and operators of designated facilities including existing MSW landfills and certain MWCs to comply with the EG applicable to those facilities. Furthermore, the monitoring, recordkeeping and reporting provisions of 40 CFR Part 60, Subparts Eb and WWW are incorporated by reference in their entirety in 25 Pa. Code Chapter 122. Consequently, the monitoring, recordkeeping and reporting requirements applicable to the designated facilities including MWCs and MSW landfills have the force and effect of Pennsylvania law.

#### **F. Making Available to the Public Emission Data Correlated to Emission Standards**

Section 13.1 of the APCA requires the Department to make all records, reports or information pertaining to emission data available to the public. As specified in 25 Pa. Code §127.411(c) records, reports or information obtained by the Department or referred to a public hearing shall be available to the public, except as provided in subsection(d). The exception in subsection (d) , which does not apply to emissions data, provides for the confidential treatment of certain information that would “adversely affect the competitive position of that person.” Such information includes the production or sales figures, or methods, processes, trade secrets and

intellectual property rights. Section 127.411(d) also provides that the Department will implement the requirements of this section consistent with the requirements in Section 112(d) (relating to emission standards) and 114(c)(relating to availability of records, reports and information to public; disclosure of trade secrets). 25 Pa. Code §127.411(d)

In accordance with the requirements of 25 Pa. Code §§127.441(c) and 127.511 (b), State operating permits and Title V permits issued to designated facilities will incorporate the monitoring, recordkeeping or reporting requirements of Chapter 139 (relating to sampling and testing), 25 Pa. Code Article III and applicable emissions monitoring and analysis procedures or test methods required under the Clean Air Act including Sections 114(a)(3) or 504(b).

The owners or operators of designated facilities subject to Title V permit requirements must include the following emissions-related information in a Title V application which shall be made available to the general public:

1) Emissions of air contaminants for which the facility is a Title V facility and emissions of regulated pollutants. The permit application shall describe emissions of regulated air pollutants emitted from a stationary air contamination source. The PADEP may also require additional information related to the emissions of air contaminants necessary to verify which requirements are applicable to each source. 25 Pa. Code §127.503(3)(i).

2) Emission rates in tons per year and in terms necessary to establish compliance consistent with the applicable emission limit and standard reference test method. 25 Pa. Code §127.503(3)(iii).

Under 40 CFR §60.25, the emissions data summarized in State Plans developed pursuant to Sections 111(d) and 129 of the Clean Air Act must be correlated to emission standards for designated pollutants. In Pennsylvania, emissions data correlated to emission standards are available to the general public. The correlated emission data will also be available for review by the general public when PADEP provides notice and opportunity for comment on the proposed plans.

#### **G. Legal Authority to Enforce the EG Prior to the Issuance of a Permit**

The Air Pollution Control Act and the regulations promulgated thereunder provide adequate authority for PADEP to enforce EG requirements developed pursuant to Sections 111(d) and 129 of the Clean Air Act prior to the issuance of a permit. Section 6.1(k) of the Act provides that PADEP shall require revisions to any permit to incorporate applicable standards and regulations promulgated under the Clean Air Act after the issuance of a Title V permit. 35 PS. §4006.1(k). Therefore, the Department will revise existing State operating permits for designated facilities to incorporate “applicable requirements” including requirements in Sections 111(d) and 129 of the Clean Air Act in accordance with the provisions in 25 Pa. Code §127.463. Section 127.463(e) also states that: “Regardless of whether a revision is required under this section, the permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by the standards or regulations.”

Subsection(e) expressly authorizes PADEP to require compliance with applicable requirements prior to the issuance of State operating permits or Title V permits to designated facilities. Failure to comply with EG requirements subjects the owners or operators of designated facilities to appropriate enforcement action including the issuance of departmental orders and the assessment of civil penalties. 35 P. S. §§4004(9)(i), 4009.1 and 4010.1.

#### **H. Legal Authority to Enforce Applicable Requirements Following the Expiration of Operating Permits**

Pennsylvania law provides the necessary authority to enforce applicable requirements including Sections 111(d) and 129 of the Clean Air Act following the expiration of an operating permit issued by PADEP. In this Commonwealth, air contamination sources may not operate without a permit. Pursuant to Section 6.1(b.2) of the APCA and 25 Pa. Code §446(c), the terms and conditions of an expired permit are automatically continued pending the issuance of new permit if the permittee has submitted a timely and complete application and paid applicable fees. 35 P.S. §4006.1(b.2) and 25 Pa. Code §127.446(c). The continued effect of expired permits applies to both state operating permits and Title V permits.

In circumstances where the owner or operator of a designated facility violates terms and conditions of the expired permit, the Department may issue enforcement orders including requiring the cessation of operation of a designated facility or any air contamination source at such facilities. 35 P.S. §§4004(9)(I) and 4010.1.

In Pennsylvania, it is unlawful to any operate stationary air contamination source without a permit. Section 6.1(b)(1) of the APCA provides that “no person shall operate any stationary air contamination source unless the department shall have issued to such person a permit to operate such source in response to a written application ...”. 35 P.S. §4006.1(b)(1). Therefore, if the owner or operator of a designated facility fails to submit an application to renew a State operating permit or Title V permit, the Department can initiate appropriate enforcement action upon expiration of the permit if the permittee continues to operate the stationary air contamination source after the permit lapses.

Section 9.1 of the APCA provides that the Department may assess up to \$25,000 per day in civil penalties for violations of the act, regulations adopted under the act, departmental orders or terms and conditions of plan approvals and operating permits. 35 P.S. §4009.1.

The provisions described above provide sufficient authority to enforce applicable requirements prior to the renewal of state operating permits or Title V permits. Additionally, Section 7.1 of the APCA authorizes the Department to withhold plan approvals, state operating permits or Title V permits where an applicant or related party has shown a lack of ability or intention to comply with the APCA. 35 P. S. §4007.1. If the permittee fails to comply with the

EG, the Department may withhold plan approvals or operating permits until the owner or operator of a designated facility corrects violations of applicable requirements, including Sections 111(d) and 129 of the Clean Air Act.

Dated: \_\_\_\_\_

Signed: \_\_\_\_\_  
Terry R. Bossert, Chief Counsel, PADEP

## **APPENDIX H: PA Air Pollution Control Act and Applicable Permitting Regulations**