State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

06/10/04

CERTIFIED MAIL

RE: Preliminary Proposed Title V
Chapter 3745-77 permit TVP005

14-31-39-0137
Cincinnati Specialties, Inc.
James F McKenna
501 Murray Road
St. Bernard, OH 45217-1014

Dear James F McKenna:

Enclosed is the Ohio EPA Preliminary Proposed Title V permit that was issued in draft form on 08/15/03. The comment period for the Draft permit has ended. We are now ready to submit this permit to USEPA for approval.

We are submitting this for your review and comment. If you do not agree with the Preliminary Proposed Title V permit as written, you now have the opportunity to raise your concerns. **In order to facilitate our review of all the comments or concerns you may have with the enclosed preliminary proposed permit, please provide a hand marked-up copy of the permit showing the changes you think are necessary, along with any additional summary comments, within fourteen (14) days from your receipt of this letter to:**

Ohio EPA, Division of Air Pollution Control
Jim Orlemann, Manager, Engineering Section
Preliminary Proposed Title V Permit Correspondence
122 South Front Street
Columbus, Ohio 43215

and

Hamilton County Dept. of Environmental Services
250 William Howard Taft Rd
Cincinnati, OH 45219-2660
(513) 946-7777

Also, if you believe that it is necessary to have an informal conference with us, then, as part of your written comments, you should request a conference concerning the written comments.

If comments are not submitted within fourteen (14) days of your receipt of this letter, we will forward the proposed permit to USEPA for approval. All comments received will be carefully considered before proceeding to the proposed permit.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: Hamilton County Dept. of Environmental Services
File, DAPC PMU

State of Ohio Environmental Protection Agency

PRELIMINARY PROPOSED TITLE V PERMIT

Issue Date: 06/10/04	Effective Date: To be entered upon final issuance	Expiration Date: To be entered upon final issuance

This document constitutes issuance of a Title V permit for Facility ID: 14-31-39-0137 to:

Cincinnati Specialties, Inc.
501 Murray Road
St. Bernard, OH 45217-1014

Emissions Unit ID (Company ID)/Emissions Unit Activity Description

B001 (Boiler No. 1)
natural gas/fuel oil boiler - oil conversion circa 1974

B003 (Boiler No. 2)
coal/fuel oil boiler - derated to 84.15 MMBtu 9/93

P001 (Fine Chemical Man.)
batch manufacture of misc. fine chemicals

P002 (Phthalimide Manufacturing)
continuous phthalimide (P) production unit

P005 (para-Cresidine Manufacturing)
batch system to manufacture para-Cresidine

P006 (Fine Chemicals Manufacturing System No. 1)
Batch system to manufacture miscellaneous specialty chemicals: PTI 14-2916

P008 (Benzotriazole Manufacturing)
batch reaction/continuous purification benzotriazole (BT) production unit

P010 (Saccharin Manufacturing)
continuous saccharin production unit

P011 (IA process)
continuous isatoic anhydride (IA) production unit: PTI 14-086

P013 (Saccharin Spray Dryer)
continuous spray dryer for sodium, calcium and insoluble saccharin

P014 (Anthranilic Acid Manufacturing)
batch reaction/continuous drying anthranilic acid (AA) production unit

P022 (Methyl Anthranilate Manufacturing)
continuous Methyl Anthranilate (MA) production unit

P023 (Methanol Recovery Unit)
continuous methanol recovery unit

P025 (Fine Chemicals System 300/400)
Initially operated under P001. PTI 14-3752:10/12/95.

P027 (Fine Chemicals System II)
Specialty Chemical manufacturing system; PTI No. 14-4460

P901 (Tolyltriazole Manufacturing)
continuous tolyltriazole (TT) production unit, previously P003

P902 (Sodium Tolyltriazole Manufacturing)
PTI 14-4534 issued 6/3/98 for production of sodium tolyltriazole via reaction and packout.

T001 (Methanol Storage Tank)
16,500 gallon fixed roof methanol storage tank

T003 (Phthalic Anhydride Storage Tank)
30,000 gallon storage tank for phthalic anhydride

Z001 (Fly Ash Handling)
fly ash from coal boiler baghouse to truck loading for offsite disposal

Z107 (Spray Dryer Heater IA-D420)
18 to 20 MMBtu/hr spray dryer serving P011 PTI 14-086

You will be contacted approximately eighteen (18) months prior to the expiration date regarding the renewal of this permit. If you are not contacted, please contact the appropriate Ohio EPA District Office or local air agency listed below. This permit and the authorization to operate the air contaminant sources (emissions units) at this facility shall expire at midnight on the expiration date shown above. If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate pursuant to OAC rule 3745-77-04(A) and in accordance with the terms of this permit beyond the expiration date, provided that a complete renewal application is submitted no earlier than eighteen (18) months and no later than one-hundred eighty (180) days prior to the expiration date.

Described below is the current Ohio EPA District Office or local air agency that is responsible for processing and administering your Title V permit:

Hamilton County Dept. of Environmental Services
250 William Howard Taft Rd
Cincinnati, OH 45219-2660
(513) 946-7777

OHIO ENVIRONMENTAL PROTECTION AGENCY

Christopher Jones
Director

PART I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Section

1. Monitoring and Related Record Keeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.III of Part III of this Title V permit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.
ii. The date(s) analyses were performed.
iii. The company or entity that performed the analyses.
iv. The analytical techniques or methods used.
v. The results of such analyses.
vi. The operating conditions existing at the time of sampling or measurement.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(i))

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))

c. The permittee shall submit required reports in the following manner:

i. **All reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations caused by malfunctions shall be submitted in the following manner:**

Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be promptly reported to the Ohio EPA in accordance with OAC rule 3745-15-06. In addition, to fulfill the OAC rule 3745-77-07(A)(3)(c) deviation reporting requirements for malfunctions, written reports that identify each malfunction that occurred during each calendar quarter (including each malfunction reported only verbally in accordance with OAC rule 3745-15-06) shall be submitted by January 31, April 30, July 31, and October 31 of each year in accordance with General Term and Condition A.1.c.ii below; and each report shall cover the previous calendar quarter.

In accordance with OAC rule 3745-15-06, a malfunction constitutes a violation of an emission limitation (or control requirement) and, therefore, is a deviation of the federally enforceable permit requirements. Even though verbal notifications and written reports are required for malfunctions pursuant to OAC rule 3745-15-06, the written reports required pursuant to this term must be submitted quarterly to satisfy the prompt reporting provision of OAC rule 3745-77-07(A)(3)(c).

In identifying each deviation caused by a malfunction, the permittee shall specify the emission limitation(s) (or control requirement(s)) for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. For a specific malfunction, if this information has been provided in a written report that was submitted in accordance with OAC rule 3745-15-06, the permittee may simply reference that written report to identify the deviation. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing on a quarterly basis.

Any scheduled maintenance, as referenced in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described above for malfunctions.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

ii. **Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Section A.IV of Part III of this Title V permit or, in some cases, in Part II of this Title V permit, all reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations of the emission limitations, operational restrictions, and control device operating parameter limitations shall be submitted in the following manner:**

Written reports of (a) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures taken, shall be promptly made to the appropriate Ohio EPA District Office or local air agency. Except as provided below, the written reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

In identifying each deviation, the permittee shall specify the emission limitation(s), operational restriction(s), and/or control device operating parameter limitation(s) for which the deviation occurred, describe each deviation, and provide the estimated magnitude and duration of each deviation.

These written reports shall satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations. OAC rule 3745-77-07(A)(3)(c) is not fully satisfied until the permittee addresses all other deviations of the federally enforceable requirements specified in the permit.

If an emissions unit has a deviation reporting requirement for a specific emission limitation, operational restriction, or control device operating parameter limitation that is not on a quarterly basis (e.g., within 30 days following the end of the calendar month, or within 30 or 45 days after the exceedance occurs), that deviation reporting requirement overrides the reporting requirements specified in this General Term and Condition for that specific emission limitation, operational restriction, or control device parameter limitation. Following the provisions of that non-quarterly deviation reporting requirement will also satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations, and additional quarterly deviation reports for that specific emission limitation, operational restriction, or control device parameter limitation are not required pursuant to this General Term and Condition.

See B.6 below if no deviations occurred during the quarter.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

iii. **All reporting required in accordance with the OAC rule 3745-77-07(A)(3)(c) for other deviations of the federally enforceable permit requirements which are not reported in accordance with General Term and Condition A.1.c.ii above shall be submitted in the following manner:**

Written reports that identify all other deviations of the federally enforceable requirements contained in this permit, including the monitoring, record keeping, and reporting requirements, which are not reported in accordance with General Term and Condition A.1.c.ii above shall be submitted to the appropriate Ohio EPA District Office or local air agency by January 31 and July 31 of each year; and each report shall cover the previous six calendar months.

In identifying each deviation, the permittee shall specify the federally enforceable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation.

These semi-annual written reports shall satisfy the reporting requirements of OAC rule 3745-77-07(A)(3)(c) for any deviations from the federally enforceable requirements contained in this permit that are not reported in accordance with General Term and Condition A.1.c.ii above.

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.
(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) and (ii))

iv. Each written report shall be signed by a responsible official certifying that, "based on information and belief formed after reasonable inquiry, the statements and information in the report (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete."
(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))

v. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

2. Scheduled Maintenance

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. Except as provided in OAC rule 3745-15-06(A)(3), any scheduled maintenance necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s). Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described for malfunctions in General Term and Condition A.1.c.i above.
(Authority for term: OAC rule 3745-77-07(A)(3)(c))

3. Risk Management Plans

If applicable, the permittee shall develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. ("Act"); and, pursuant to 40 C.F.R. 68.215(a), the permittee shall submit either of the following:

a. a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or

b. as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

(Authority for term: OAC rule 3745-77-07(A)(4))

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.
(Authority for term: OAC rule 3745-77-07(A)(5))

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
(Authority for term: OAC rule 3745-77-07(A)(6))

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.10 below. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(Authority for term: OAC rule 3745-77-07(A)(7))

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78.
(Authority for term: OAC rule 3745-77-07(A)(8))

8. Marketable Permit Programs

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.
(Authority for term: OAC rule 3745-77-07(A)(9))

9. Reasonably Anticipated Operating Scenarios

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these general terms and conditions shall apply to all operating scenarios authorized in this permit.
(Authority for term: OAC rule 3745-77-07(A)(10))

10. Reopening for Cause

This Title V permit will be reopened prior to its expiration date under the following conditions:

a. Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.

b. This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.

c. The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.

d. The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

(Authority for term: OAC rules 3745-77-07(A)(12) and 3745-77-08(D))

11. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

(Authority for term: OAC rule 3745-77-07(B))

12. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with paragraph (E) of OAC rule 3745-77-03.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

d. Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) and the Administrator of the U.S. EPA in the following manner and with the following content:

i. Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.
ii. Compliance certifications shall include the following:
(a) An identification of each term or condition of this permit that is the basis of the certification.
(b) The permittee's current compliance status.
(c) Whether compliance was continuous or intermittent.
(d) The method(s) used for determining the compliance status of the source currently and over the required reporting period.
(e) Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.
iii. Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(Authority for term: OAC rules 3745-77-07(C)(1),(2),(4) and (5) and ORC section 3704.03(L))

13. Permit Shield

a. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.

b. This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

(Authority for term: OAC rule 3745-77-07(F))

14. Operational Flexibility

The permittee is authorized to make the changes identified in OAC rule 3745-77-07(H)(1)(a) to (H)(1)(c) within the permitted stationary source without obtaining a permit revision, if such change is not a modification under any provision of Title I of the Act [as defined in OAC rule 3745-77-01(JJ)], and does not result in an exceedance of the emissions allowed under this permit (whether expressed therein as a rate of emissions or in terms of total emissions), and the permittee provides the Administrator of the U.S. EPA and the appropriate Ohio EPA District Office or local air agency with written notification within a minimum of seven days in advance of the proposed changes, unless the change is associated with, or in response to, emergency conditions. If less than seven days notice is provided because of a need to respond more quickly to such emergency conditions, the permittee shall provide notice to the Administrator of the U.S. EPA and the appropriate District Office of the Ohio EPA or local

air agency as soon as possible after learning of the need to make the change. The notification shall contain the items required under OAC rule 3745-77-07(H)(2)(d).
(Authority for term: OAC rules 3745-77-07(H)(1) and (2))

15. Emergencies

The permittee shall have an affirmative defense of emergency to an action brought for noncompliance with technology-based emission limitations if the conditions of OAC rule 3745-77-07(G)(3) are met. This emergency defense provision is in addition to any emergency or upset provision contained in any applicable requirement.
(Authority for term: OAC rule 3745-77-07(G))

16. Off-Permit Changes

The owner or operator of a Title V source may make any change in its operations or emissions at the source that is not specifically addressed or prohibited in the Title V permit, without obtaining an amendment or modification of the permit, provided that the following conditions are met:

a. The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.

b. The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA. Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.

c. The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).

d. The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e. The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

Paragraph (I) of rule 3745-77-07 of the Administrative Code applies only to modification or amendment of the permittee's Title V permit. The change made may require a permit to install under Chapter 3745-31 of the Administrative Code if the change constitutes a modification as defined in that Chapter. Nothing in paragraph (I) of rule 3745-77-07 of the Administrative Code shall affect any applicable obligation under Chapter 3745-31 of the Administrative Code.
(Authority for term: OAC rule 3745-77-07(I))

17. Compliance Method Requirements

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Fed. Reg. 8314, Feb. 24, 1997), in the context of any future proceeding.
(This term is provided for informational purposes only.)

18. Insignificant Activities

Each insignificant activity that has one or more applicable requirements shall comply with those applicable requirements.
(Authority for term: OAC rule 3745-77-07(A)(1))

19. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.
(Authority for term: OAC rule 3745-77-07(A)(1))

20. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.
(Authority for term: OAC rule 3745-77-07(A)(1))

21. Permanent Shutdown of an Emissions Unit

The permittee may notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification by the responsible official of the date on which the emissions unit was permanently shut down. Authorization to operate the affected part or activity of the stationary source shall cease upon the date certified by the responsible official that the emissions unit was permanently shut down.

If an emissions unit is permanently shut down (i.e., that has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31 and therefore ceases to meet the definition of an "emissions unit" as defined in OAC rule 3745-77-01(O)), rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the date of the certification and submission to Ohio EPA, to meet any monitoring, record keeping, reporting, or testing requirements, applicable to that emissions unit, except for any residual requirements, such as the quarterly deviation reports, semi-annual deviation reports and annual compliance certification covering the period during which the emissions unit last operated. All records relating to the shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law.

No emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit to install pursuant to OAC Chapter 3745-31.

B. *State Only Enforceable Section*

1. Reporting Requirements Related to Monitoring and Record Keeping Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (i) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. In identifying each deviation, the permittee shall specify the applicable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

2. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

3. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

4. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

5. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

6. Additional Reporting Requirements When There Are No Deviations of <u>Federally Enforceable</u> Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no emission limitation (or control requirement), operational restriction and/or control device parameter limitation deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

The permittee is not required to submit a quarterly report which states that no deviations occurred during that quarter for the following situations:

a. where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in General Term and Condition A.1.c.ii;

b. where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potentials to emit; and

c. where the company's responsible official has certified that an emissions unit has been permanently shut down.

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforceable Section

1. 40 CFR Part 68 is an applicable requirement for this facility. The permittee shall comply with the Risk Management Plan submitted to the Hamilton County Department of Environmental Services.

2. The permittee is subject to the applicable emission limitation(s) and/or control measures, operational restrictions, monitoring and/or record keeping requirements, reporting requirements, testing requirements and the general and/or other requirements specified in National Emission Standards for Hazardous Air Pollutants (NESHAP) for 40 CFR Part 63, Subpart DDDDD, Industrial/Commercial/Institutional Boilers and Process Heaters (including the Tables and Appendices referenced in Subpart DDDD), which are included in the text of Attachment 2 hereto, and are hereby incorporated into this permit as if fully rewritten.

Ordinarily, these requirements would be incorporated into Part II of this Title V permit; however, incorporating Subpart DDDDD into Part II of this Title V permit was not practical due to technical incompatibilities and the limitations of the STARS program. In addition, numerous difficulties were encountered in attempting to copy and paste the Subpart's tables and/or equations into STARS format.

The following emissions units in this permit may be subject to the aforementioned requirements:

B001
B003

3. The permittee is subject to the applicable emission limitation(s) and/or control measures, operational restrictions, monitoring and/or record keeping requirements, reporting requirements, testing requirements and the general and/or other requirements specified in 40 CFR Part 63 Supbart FFFF Miscellaneous Organic Chemical Production and Processes (MON). In accordance with 40 CFR Part 63, Subpart FFFF (including the Tables and Appendices referenced in Subpart FFFF), which are included in the text of Attachment 1 hereto, and are hereby incorporated into this permit as if fully rewritten.

Ordinarily, these requirements would be incorporated into Part II of this Title V permit; however, incorporating Subpart FFFF into Part II of this Title V permit was not practical due to technical incompatibilities and the limitations of the STARS program. In addition, numerous difficulties were encountered in attempting to copy and paste the Subpart's tables and/or equations into STARS format.

The following emissions units in this permit may be subject to the aforementioned requirements:

P001
P006
P010
P014
P022
P023
P024
P025
P027

A. State and Federally Enforceable Section (continued)

4. The following insignificant emissions units are located at this facility:

P004 Fine Chemicals Manufacturing System No. 5
P015 HPT Manufacturing (PTI 14-03494)
P026 Fine Chemicals Manufacturing System No. 14 (PTI 14-03989)
T004 Sulfuric Acid Storage Tank (PTI 14-02532)
T006 o-Toluenediamine Storage Tank (PTI 14-02687)
T007 Acetic Acid Storage Tank (PTI 14-02687)
T008 o-Phenylenediamine Storage Tank (PTI 14-02687)
T009 Sodium Methylate Storage Tank (PTI 14-02688)
T010 Methyl Anthranilate Storage Tank (PTI 14-03221)
F001 Coal Unloading
Z004 Fine Chemicals Pilot Plant
Z005 Building 38 Chlorine Vaporizer
Z006 Building 35 Chlorine Vaporizer
Z101 Emergency Generator
Z102 Diesel Engine for Fire Pump
Z103 Process Heater X-420
Z104 Process Heater X-470
Z105 Process Heater X-170
Z201 CMB Storage Tank
Z204 p-Cresidine Storage Tank
Z205 Dimethyl sulfate Storage Tank
Z207 300,000-Gallon Fuel Oil Storage Tank
Z208 10,000-Gallon Fuel Oil Storage Tank
Z209 20,000-Gallon Fuel Oil Storage Tank
Z211 13,000-Gallon Hydrochloric Acid Storage Tank
Z212 13,000 Gallon Hydrochloric Acid Storage Tank
Z214 m-nitro-p-cresol Storage Tank
Z216 o-nitro aniline Storage Tank
Z217 2-nitro-4-methylanisole Storage Tank
Z223 Sodium Tolyltriazole Storage Tank
Z225 Acetic Acid Storage Tank
Z229 Sulfuric Acid Storage Tank
Z301 TT-50S Tank Wagon Filling
Z302 HCl Tank Wagon Filling
Z304 HCl Drum Filling Station
Z399 Gasoline Dispensing
Z401 Nauta Mixer
Z402 DeVine Dryer
Z403 Tray Dryer D-420
Z404 Tray Dryer D-421
Z405 Fitzmill Dryer D-500
Z503 Pritchard Cooling Tower
Z601 TT North Dowtherm Unit
Z602 TT West Multitherm Unit
Z603 BT/HPT Multitherm Unit

A. State and Federally Enforceable Section (continued)

Z701 Bldg 37 Lab Hood-Research Lab, First Floor, West Wall
Z702 Bldg 37 Lab Hood-Research Lab, First Floor, South Wall
Z703 Bldg 37 Lab Hood-Research Lab, Second Floor, West End-North
Z704 Bldg 37 Lab Hood-Research Lab, Second Floor, West End-South
Z705 Bldg 37 Lab Hood-Research Lab, Second Floor, Center-West
Z706 Bldg 37 Lab Hood-Research Lab, Second Floor, Center-East
Z707 Bldg 37 Lab Hood-Research Lab, Second Floor, East End-West
Z708 Bldg 37 Lab Hood-Research Lab, Second Floor, East End-East
Z710 QA Lab Hood-Main Lab, North Wall
Z711 QA Lab Hood-Main Lab, West Wall
Z712 QA Lab Hood-Sample Room, North Wall
Z713 QA Lab Hood-Sample Room, East Wall
Z714 QA Lab Hood-NPC Area, East Wall
Z720 In-Process Test Hood-IA Control Room
Z721 In-Process Test Hood-Bldg 35, Saccharin Control Room
Z722 In-Process Test Hood-Bldg 38 Lab
Z901 Building 12 Parts Washer-Powerhouse
Z902 Building 24 Parts Washer-Maintenance Shop
Z903 Drum Warmer-Bldg 38, Third Floor, East
Z904 Drum Warmer-Bldg 40, Second Floor, East
Z910 Roadways and Parking Areas

Each insignificant emissions unit at this facility must comply with all applicable State and federal regulations, and well as any emission limitations and/or control requirements contained within the identified permit to install for the emissions unit. Insignificant emissions units listed above that are not subject to specific permit to install requirements are subject to one or more of the applicable requirements contained in the federally-approved versions of OAC Chapters 3745-17, 3745-18, and/or 3745-21.

B. State Only Enforceable Section

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Boiler No. 1 (B001)

Activity Description: natural gas/fuel oil boiler - oil conversion circa 1974

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
62.9 MMBtu/hr natural gas, No. 2 oil-fired boiler	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/MMBtu of actual heat input
	OAC rule 3745-18-37(FF)	2.0 lbs of SO2/MMBtu of actual heat input
	40 CFR Part 63, Subpart DDDDD	See Attachment 2 of this permit.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall burn only natural gas and No. 2 fuel oil in this emissions unit.

2. The quality of oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable SO2 emission limitation specified in section A.I.1 above.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas and/or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

III. Monitoring and/or Record Keeping Requirements (continued)

2. For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F). A shipment may be comprised of multiple tank truck loads from the same supplier's batch, or may be represented by single or multiple pipeline deliveries from the same supplier's batch, and the quality of the oil for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas or No. 2 fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of oil which is received for burning in this emissions unit. The permittee's or oil supplier's analyses shall document the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil. The following information shall also be included with the copies of the permittee's or oil supplier's analyses:

a. the total quantity of oil received in each shipment (gallons).

b. the calculated sulfur dioxide emission rate (pounds/MMBtu) for each shipment of oil (this calculation shall be performed using the equation specified in OAC rule 3745-18-04(F)).

These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall cover the oil shipments received during the previous calendar quarters.

V. Testing Requirements

1. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. Emission Limitation:
0.020 lb of PE/MMBtu of actual heat input

Applicable compliance method when burning only natural gas:
For the use of natural gas, compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (MM cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 1.9 lbs filterable PE/MM cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

Applicable compliance method when burning No. 2 fuel oil:
For the use of No. 2 fuel oil, compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 2.0 lbs filterable PE/1000 gallons, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBtu emission limit above pursuant to OAC rule 3745-17-03(B)(9).

3. Emission Limitation:
2.0 lbs/MMBtu of sulfur dioxide

Applicable Compliance Method when No.2 fuel oil:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.2.b of this permit.

Applicable compliance method when burning natural gas:
For the use of natural gas, compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (MM cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 0.6 lb SO2/MM cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with USEPA reference Method 6, Method 6A, Method 6B, or Method 6c, whichever is appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Boiler No. 2 (B003)

Activity Description: coal/fuel oil boiler - derated to 84.15 MMBtu 9/93

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
98 MMBtu/hr coal/oil-fired boiler with baghouse (derated to 71.2 MMBtu, based on March 1999 stack test)	OAC rule 3745-31-05(A)(3) (PTI 14-307)	See A.II.5. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-10(C) and 3745-18-37(FF).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-10(C)	0.22 lb PE/MMBtu of actual heat input See A.I.2.
	OAC rule 3745-18-37(FF)	1.6 lbs SO2/MMBtu of actual heat input
	40 CFR Part 63, Subpart DDDDD	See Attachment 2 of this permit.

2. Additional Terms and Conditions

2.a Pursuant to OAC rule 3745-17-10, the total heat input for B003 is derated from 98 MMBtu/hr to 71.2 MMBtu/hr. (The derated total heat input of 71.2 MMBtu/hr corresponds to a steam load of 53,460 pounds per hour.) Using the derated total heat input, the allowable particulate emissions rate for B003, from Figure I of OAC rule 3745-17-10, is 0.22 pound per MMBtu actual heat input.

II. Operational Restrictions

1. The permittee shall vent the emissions from B003 to a baghouse. The permittee shall maintain and operate the baghouse according to the manufacturer's specifications.

II. Operational Restrictions (continued)

2. The pressure drop across the baghouse shall be maintained within the range of 3 - 7.5 inches of water while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The quality of the coal and fuel oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable SO2 emission limitation specified in section A.1 above.

4. At no time shall the steam flow rate from B003 exceed 53,460 pounds per hour (as an average over any one-hour period).

5. The stack height of this boiler shall be at least 100 feet measured above ground level.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

2. The permittee shall collect or require the coal supplier to collect a representative grab sample of each shipment of coal that is received for burning in this emissions unit. The permittee shall provide coal sampling and analysis in accordance with 40 CFR, Part 60, "Appendix A", Method 19. The permittee shall perform or require the supplier to perform the coal sampling in accordance with ASTM method D2234, Collection of a Gross Sample of Coal. Pursuant to OAC rule 3745-18-04(D)(8)(d)(iv), the permittee shall collect one representative coal sample per week for analysis. The coal sample shall consist of at least six sample increments weighing a minimum of 1.5 pounds each.

Each weekly composite sample of coal shall be analyzed for ash content (percent), sulfur content (percent), and heat content (Btu/pound of coal). The analytical methods for ash content, sulfur content, and heat content shall be: ASTM method D3174, Ash in the Analysis of Coal and Coke; ASTM method D3177, Total Sulfur in the Analysis Sample of Coal and Coke or ASTM method D4239, Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods; and ASTM method D2015, Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, ASTM method D3286, Gross Calorific Value of Coal and Coke by the Isothermal Bomb Calorimeter, or ASTM method D1989, Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters, respectively. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

For the weekly composite sample of coal received for burning in this emissions unit, the permittee shall maintain records of the total quantity of coal received, the permittee's or coal supplier's analyses for ash content, sulfur content and heat content, and the calculated sulfur dioxide emission rate in pounds of sulfur dioxide per MMBtu of actual heat input. This calculation shall be performed according to the methods specified in OAC rule 3745-18-04(G).

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

III. Monitoring and/or Record Keeping Requirements (continued)

For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate in lbs of sulfur dioxide per MMBtu of actual heat input. This calculation shall be performed according to methods specified in OAC rule 3745-18-04(G).

4. The permittee shall operate and maintain equipment to continuously monitor and record the steam flow rate, recorded in lbs of steam/hr, from B003. Copies of all steam flow rate charts shall be maintained for a period of 5 years, and shall be made available to the Hamilton County Department of Environmental Services upon verbal or written request.

5. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

2. The permittee shall submit, on a quarterly basis, copies of the permittee's or coal supplier's analyses (wet and/or dry) for the shipments of coal which are received for burning in this emissions unit. The permittee or coal supplier's analyses shall document the ash content (percent), sulfur content (percent), and heat content (Btu/pound) of each weekly composite sample of coal. The following information shall also be included in each report:

a. the total quantity of coal received in each shipment (tons) and the total quantity of coal associated with each weekly composite sample (tons);

b. the ash content (percent) of each weekly composite sample;

c. the sulfur content (percent) of each weekly composite sample;

d. the heat content (Btu/pound) of each weekly composite sample; and

e. the calculated SO2 emission rate (lbs/MMBtu actual heat input) for the coal in each weekly composite sample. The SO2 emission rate shall be calculated using the applicable methods specified in OAC rule 3745-18-04(G).

These quarterly reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall cover the coal shipments received during the previous calendar quarters.

IV. Reporting Requirements (continued)

3. The permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of oil which is received for burning in this emissions unit. The permittee's or oil supplier's analyses shall document the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil. The following information shall also be included with the copies of the permittee's or oil supplier's analyses:

a. the total quantity of oil received in each shipment (gallons);

b. the calculated SO2 emission rate (lbs/MMBtu actual heat input) of the oil received in each shipment. The SO2 emission rate shall be calculated using the applicable methods specified in OAC rule 3745-18-04(G).

These quarterly reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall cover the oil shipments received during the previous calendar quarters.

4. If for any reason the steam flow rate from B003 exceeds 53,460 pounds per hour, the following information shall be reported within 5 business days after the exceedance:

a. the date of the exceedance;

b. the time interval over which the exceedance occurred;

c. the value of the exceedance;

d. the cause(s) of the exceedance;

e. the corrective action which has been or will be taken to prevent similar exceedances in the future; and

f. a copy of the steam chart which shows the exceedance.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. To demonstrate compliance with the particulate emission limitation when burning coal, the permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within two (2) to three (3) years after issuance of the permit, and within 12 months prior to permit expiration.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for particulate emissions specified in A.I.1.

c. Methods 1-5 of 40 CFR Part 60, Appendix A, shall be employed to demonstrate compliance with the allowable particulate emission rate.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

V. Testing Requirements (continued)

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

2. Emission Limitation:
Particulate emissions shall not exceed 0.22 lb/MMBtu of actual heat input.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed with 40 CFR Part 60, Appendix A, Methods 1 - 5.

3. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

4. Emission Limitation:
Sulfur dioxide emissions shall not exceed 1.6 lbs/MMBtu of actual heat input.

Applicable Compliance Method when No.2 fuel oil:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.3.b of this permit.

Applicable Compliance Method when burning coal:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.2.e of this permit.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed with 40 CFR Part 60, Appendix A, Methods 1 through 4, and 6.

5. Compliance with the average daily operating rate limitation specified in A.I.2 shall be determined by the record keeping requirements in Section A.III.4 of this permit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemical Man. (P001)

Activity Description: batch manufacture of misc. fine chemicals

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical manufacturing with packed bed scrubber system (See A.VI.1 below.)	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the charging process associated with this emissions unit shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a below.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).
	OAC rule 3745-21-07(G)	None, see A.I.2.b below.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

2. Additional Terms and Conditions (continued)

2.b The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. The emissions from T830 shall be vented to packed bed scrubber E830.

2. The pressure drop across the packed bed scrubber (E830) shall be maintained at a value within the range of 3.5 to 5 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the packed bed scrubber (E830) shall be continuously maintained at a value of not less than 34.8 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The pH of the scrubber liquor for the packed bed scrubber (E830) shall be maintained at a value greater than or equal to 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

2. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber;

b. the scrubber liquor flow rate; and

c. the pH of the scrubber liquor.

The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

2. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
0.030grPE/dscf from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

3. Emission Limitation:
no VEs from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the no visible emission limitation above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Phthalimide Manufacturing (P002)

Activity Description: continuous phthalimide (P) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
phthalimide manufacturing, equipped with a venturi scrubber, baghouse, and dust bag (fabric filter placed over drum while grinding and load out is occurring) (See A.VI.1 below.)	40 CFR Part 63, Subpart F	The total resource effectiveness (TRE) values for this process are greater than 4; therefore, no control measures are required.
	40 CFR Part 63, Subpart G (40 CFR 63.113(e))	As an owner or operator of a Group 2 process vent with a TRE value greater than 4.0, the permittee shall maintain a TRE index value greater than 4.0 and shall comply with the provisions for calculation of a TRE index value in 40 CFR 63.115 and the reporting and record keeping provisions in 40 CFR 63.117(b) and 63.118(c) and (h). The permittee currently is not subject to monitoring or any other provisions of 40 CFR 63.114 through 63.118.
	40 CFR Part 63, Subpart H	See A.I.2.a, A.I.2.b, A.III.5, and A.III.7-A.III.14.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-21-07(G)	See A.I.2.d.
	OAC rule 3745-21-09(DD)	As provided for in OAC rule 3745-21-09(DD)(17)(a)(ii) this emission unit is exempt from the requirements of OAC rule 3745-21-09(DD)(2)-(6).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).
	OAC rule 3745-17-08(B)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The leak detection and repair program pertains to any type of valve or connector in organic hazardous air pollutant service within the Building 36 phthalic anhydride line. The equipment covered by this permit and subject to the SOCMI HON fugitive emissions at the time of permit issuance are listed below for general reference purposes. Changes to quantities do not necessarily require a modification to this permit:

Valves in heavy liquid service = 5
Nozzles and flow transmitters = 2
Connectors = 3

2.b Each piece of equipment that is in organic hazardous air pollutant service must be identified such that it can be distinguished readily from equipment that is not subject to the SOCMI HON regulations. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.

2.c The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber or baghouse capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent; and

iv. ventilation for the dust bag shall be securely attached to the collection drum. There shall be no visible PE from the dust bag.

v. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

2.d The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. The emissions from the flake pack out and pack out drums (non-ground product) shall be vented to the venturi scrubber (P-Scrubber).

II. Operational Restrictions (continued)

2. The pressure drop across the venturi scrubber (P-Scrubber) shall be continuously maintained at a value of not less than 6 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the venturi scrubber (P-Scrubber) shall be continuously maintained at a value of not less than 100 gallons per minute while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The permittee shall maintain a TRE index value greater than 4.0 and comply with the provisions for calculation of the TRE index in 40 CFR 63.115.

5. The pressure drop across the baghouse shall be continuously maintained between 5 and 7 inches of water at all times while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The emissions from the sublimer and flaker shall be vented to the baghouse.

7. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

III. Monitoring and/or Record Keeping Requirements

1. For the venturi scrubber (P-Scrubber), the permittee shall properly install*, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

* The scrubber liquor flow rate monitor shall be installed and operational within 3 months of the effective date of this permit.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis; and

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall properly install*, operate and maintain equipment to continuously monitor the static pressure drop across the baghouse while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall collect and record the pressure drop across the baghouse, in inches of water, on a once per shift basis.

* The baghouse pressure drop monitor shall be installed and operational within 3 months of the effective date of this permit.

3. The permittee shall maintain a daily log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10) and 40 CFR 63.161.

6. The permittee shall maintain up-to-date, readily accessible records of the following:

a. Any process changes that include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. (Process changes do not include process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.)

b. Any recalculation of the TRE index value, flow, or organic hazardous air pollutants concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent.

7. When a leak is detected within this emissions unit, the following requirements apply:

a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

b. The identification on a valve may be removed after it has been monitored as per the regulated method (as defined in 40 CFR Part 63, Subpart H) and no leak has been detected during the follow up monitoring.

c. The identification which has been placed on equipment determined to have a leak, except for a valve, may be removed after it is repaired.

III. Monitoring and/or Record Keeping Requirements (continued)

8. Valves and connectors in heavy liquid service and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired in accordance with the requirements of A.III.8.c and d, it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b).

If an instrument reading of 500 parts per million or greater for valves, connectors and instrumentation systems is measured, a leak is detected.

When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in A.III.9. of this permit. The first attempt at repair shall be no later than 5 calendar days after each leak is detected. For equipment identified in the first paragraph of this section that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check; or that the system will hold a test pressure.

First attempts at repair include, but are not limited to:

a. tightening of bolts;

b. replacement of bonnet bolts;

c. tightening of packing gland nuts; and

d. injection of lubricant into lubricated packing.

9. Delay of repair of equipment for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

Delay of repair for valves and connectors is also allowed if:

a. the owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

b. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 63.172.

Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

10. If there is more than one process unit subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the record keeping requirements for these process units in one record keeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this permit shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

III. Monitoring and/or Record Keeping Requirements (continued)

11. The following information pertaining to all equipment in each process unit subject to the requirements of 40 CFR Part 63, Subpart H shall be recorded:

a. A list of identification numbers for equipment and instrumentation systems subject to the requirements of 40 CFR Part 63, Subpart H. Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a group, and the number of connectors subject is indicated. Individual components in an instrumentation system need not be identified.

b. Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this permit may be identified on a plant site plan, in log entries, or by other appropriate methods.

12. When each leak is detected as specified in A.III.8. of this permit, the following information shall be recorded and kept for five years:

a. The instrument and the equipment identification number and the operator name, initials, or identification number.

b. The date the leak was detected and the date of first attempt to repair the leak.

c. The date of successful repair of the leak.

d. The maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

e. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;

i. The permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan required by 40 CFR 63.6(e)(3) or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

ii. If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

f. The dates of process unit shutdowns that occur while the equipment is unrepaired.

g. Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records.

13. For visual inspections of equipment, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in A.III.14. of this permit for leaking equipment identified in this inspection. These records shall be retained for 5 years.

14. The permittee shall retain information, data, and analyses used to determine or demonstrate that a piece of equipment is in heavy liquid service. A determination or demonstration shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

15. While product grinding and load out is occurring, the dust bag shall be examined to ensure the dust bag is securely attached to the collection drum and is free of visible emissions of fugitive dust while product load out is occurring. This inspection shall be conducted on a once per shift basis. The results of the inspection and any corrective action taken to eliminate any problems shall be collected and recorded in a log book.

III. Monitoring and/or Record Keeping Requirements (continued)

16. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber or baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. The static pressure drop across the scrubber.

b. The scrubber liquor flow rate.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the static pressure drop across the baghouse was not maintained at or above the required levels.

3. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 45 days after any photochemically reactive material was employed.

4. Prior to any changes in the production of phthalimide, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as Heavy Liquids.

5. The permittee shall submit semi-annual reports of start-ups, shutdowns and malfunctions as required by 40 CFR 63.10(d)(5).

6. A report containing the information required by A.III.7. of this permit shall be submitted semiannually by January 22 and July 22 of each calendar year.

7. For each process unit subject to the leak detection and monitoring requirements of this permit, the following report summary is required for each monitoring period during the 6-month period:

a. the number of valves for which leaks were detected, the percent leakers, and the total number of valves monitored;

b. the number of valves for which leaks were not repaired, identifying the number of those that are determined nonrepairable;

c. the number of connectors for which leaks were detected, the percent of connectors leaking, and the total number of connectors monitored;

d. the number of connectors for which leaks were not repaired, identifying the number of those that are determined nonrepairable; and

e. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

8. The permittee shall submit quarterly deviation (excursion) reports that identify all days for which product grinding and load out occurred and the inspection required in A.III.15 of the dust bag did not take place and/or visible emissions were documented.

IV. Reporting Requirements (continued)

9. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

10. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber or baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
No visible emissions from the stacks associated with the baghouse and scrubber.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

2. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

3. Emission Limitation:
0.030grPE/dscf from the scrubber or baghouse

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

4. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirement in A.III.5.

5. When monitoring for Hazardous Air Pollutant (HAP) or VOC leaks, the permittee shall comply with Method 21 of 40 CFR 60, Appendix A.

6. The permittee shall comply with the following procedures and requirements:

a. Except as provided for in Section A.V.8.b., the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAPs or VOCs, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

b. If no instrument is available at the plant site that will meet the performance criteria specified in Section A.V.8.a., the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in Section A.V.8.a.

c. The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, Appendix A.

V. Testing Requirements (continued)

7. Calibration gases shall be:

a. Zero air (less than 10 parts per million of hydrocarbon in air).

b. Mixtures of methane in air at the concentrations specified in this section. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in Section A.V.8.a. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air. A mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 500 ppm for all equipment, except as provided in Section A.V.8.c.3).

c. The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the permittee need not calibrate the scales that will not be used during that day's monitoring.

8. Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

9. Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless the permittee demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used.

The permittee may use good engineering judgment rather than the procedures in the above paragraph to determine that the percent organic HAP content does not exceed 5 percent by weight. When the permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in the above paragraph shall be used to resolve the disagreement.

Conversely, the permittee may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

If the permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in the first paragraph of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.

Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

10. Compliance with 40 CFR Part 63, Subpart G shall be demonstrated by the record keeping requirements of A.III.6.

11. Compliance with the requirements of 40 CFR Part 63, Subpart H shall be demonstrated by the record keeping requirements of A.I.2.a, A.I.2.b, A.III.5, and A.III.7-A.III.14.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: para-Cresidine Manufacturing (P005)

Activity Description: batch system to manufacture para-Cresidine

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
p-cresidine manufacturing with venturi and packed bed scrubbers	OAC rule 3745-21-07(G)	See A.I.2.a.

2. Additional Terms and Conditions

2.a The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2.b When manufacturing NMSO or MASO the emissions from T-700 shall be vented to venturi scrubber (P-656) and packed bed scrubber (C-655).
When manufacturing BBT the emissions from T-650, T-700, T660, or T710 and shall be vented to packed bed scrubber C-655.

II. Operational Restrictions

1. The pressure drops across the scrubbers shall be continuously maintained at the following values at all times while the emissions unit is in operation:

a. venturi scrubber (P-656): 2 inches of water; and

b. packed-bed scrubber (C-655): 2.5 inches of water.

The pressure drop across the scrubbers may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

2. The scrubber liquor flow rates shall be continouosly maintained at the following values at all times while the emissions unit is in operation:

a. venturi scrubber (P-656): 112 gallons per minute; and

b. packed-bed scrubber (C-655): 100 gallons per minute.

The scrubber liquor flow rates may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The pH of the scrubbing liquor for venturi scrubber P-656 shall be maintained between 9 -11.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

2. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubbers and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubbers, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for venturi scrubber P-656; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

IV. Reporting Requirements (continued)

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubbers;

b. the scrubber liquor flow rate; and

c. the pH for the scrubber liquor in venturi scrubber P-656.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Compliance with OAC rule 3745-21-07(G) shall be demonstrated by the record keeping requirements in A.III.1.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals Manufacturing System No. 1 (P006)

Activity Description: Batch system to manufacture miscellaneous specialty chemicals: PTI 14-2916

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system #1 (batch manufacturing of specialty chemicals), equipped with a venturi scrubber	OAC rule 3745-31-05(A)(3) (PTI 14-02916)	For the production of NaCOPA, the following emission limitations shall not be exceeded. 0.024 lb organic compounds (OC)/hr* and 0.11 TPY 0.21 lb chlorine (Cl)/hr* and 0.92 TPY *The lbs/hr emission limitations established in PTI 14-02916 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure compliance with these limitations. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(B)(1), 3745-17-08(B) and 3745-21-07(G).
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the charging process shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a below.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	When employing products that are photochemically reactive materials as defined in OAC rule 3745-21-01(c)(5), the following emission limitations shall not be exceeded: 8 lbs OC/hr, 40 lbs/OC/day
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the permittee shall use hoods, fans, and equipment to adequately enclose, contain, capture, and vent the emissions of fugitive dust;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and

iii. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or liminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from T100, T120, T125, and T130 shall be vented to venturi scrubber P150 (acid gas scrubber).

2. The pressure drop across scrubber P150 (acid gas scrubber) shall be continuously maintained at a value of not less than 0.25 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate for scrubber P150 (acid gas scrubber) shall be continuously maintained at a value of not less than 15 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The pH of scrubber P150 (acid gas scrubber) shall be continuously maintained at a value greater than 4.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. For venturi scrubber P150 (acid gas scrubber), the permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate, and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day for scrubber P150 (acid gas scrubber):

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall collect and record the following information for each day that a photochemically reactive material is employed:

a. The company identification for each material used and product manufactured; and

b. The maximum hourly and daily emissions calculations for this process.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the scrubber parameters were not maintained at or above the required levels specified in A.II:

a. The static pressure drop across the scrubbers;

b. The scrubber liquor flow rates; and

c. The pH of the scrubber liquor.

The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

2. The permittee shall submit deviation (excursion) reports which include the following information:

a. For the days during which a photochemically reactive material was employed, an identification of each day during which the average hourly organic compound emissions from the materials and products exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day .

b. For the days during which a photochemically reactive material was employed or produced, an identification of each day during which the organic compound emissions from the materials and products exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
8 lbs OC/hr, 40 lbs/OC/day on days when photochemically reactive materials are employed.

Applicable Compliance Method:
Compliance shall be determined through the emission calculations in A.III.2.

4. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

5. Emission Limitations:
For the production of NaCOPA:

0.024 lb organic compounds (OC)/hr and 0.11 TPY

0.21 lb chlorine (Cl)/hr and 0.92 TPY

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations above by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-2916.

VI. Miscellaneous Requirements

1. None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Fine chemicals system #1 with venturi scrubber - batch manufacturing of specialty chemicals	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Benzotriazole Manufacturing (P008)

Activity Description: batch reaction/continuous purification benzotriazole (BT) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
benzotriazole manufacturing, equipped with a venturi scrubber and thermal oxidizer (See A.VI.1 below.)	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-21-07(G)	None, see A.I.2.a below.
	OAC rule 3745-21-09(DD)	See A.II.6.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).

2. Additional Terms and Conditions

2.a The permittee shall not emply any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2. Additional Terms and Conditions (continued)

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

II. Operational Restrictions

1. The pressure drop across venturi scrubber P656 shall be continuously maintained at a value of not less than 2 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

2. The scrubber liquor flow rate for venturi scrubber P656 shall be continuously maintained at a value of not less than 112 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The pH of the scrubber liquor for venturi scrubber P656 shall be maintained within the range of 9 to 11.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation and Control Option #1 is used (see A.II.5 for the requirements of control option #1 and #2), shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

5. The permittee shall operate this emissions unit using Control Option #1, as specified below, provided that the thermal oxidizer is operating pursuant to the terms and conditions for emissions units P014 and P022. If the thermal oxidizer is not operating, then Control Option #2 shall be used. The Hamilton County Department of Environmental Services shall be notified immediately of the intention to switch from Control Option #1 to Control Option #2, except in the case of a start-up condition, during which the thermal oxidizer is undergoing the required heat-up procedure.

II. Operational Restrictions (continued)

Control Option #1 (with Thermal Oxidizer):

a. Emissions from reaction vessel T-760 and barometric water vessel T-665 shall be vented to the atmosphere.

b. Emissions from reaction vessels T-660 and T-650 shall be vented through the venturi scrubber.

c. Emissions from reaction vessels T-901 or T-102 and the residue packout shall be vented to the thermal oxidizer.

d. Emissions from the vacuum system, vacuum jets, powder packout and flake packout shall be vented to the atmosphere.

Control Option #2 (without Thermal Oxidizer):

a. Emissions from reaction vessel T-760 and barometric water vessel T-665 shall be vented to the atmosphere.

b. Emissions from reaction vessels T-660 and T-650 shall be vented through the scrubber.

c. Emissions from reaction vessels T-901 or T-102 and the residue packout shall be vented to the atmosphere.

d. Emissions from the vacuum system, vacuum jets, powder packout and flake packout shall be vented to the atmosphere.

6. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months of issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation and Control Option #1 is used. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.

b. A log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit.

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained for venturi scrubber P656 at or above the required levels:

a. the static pressure drop across the scrubber;

b. the scrubber liquor flow rate; and

c. the pH of the scrubber liquor.

2. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

IV. Reporting Requirements (continued)

4. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

5. Prior to any changes in the production of benzotriazole, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as Heavy Liquids.

6. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
0.030grPE/dscf from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

3. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in A.III.4.

4. This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

2. The control requirements under Control Option 1 & 2 were required for resolution to a verfied complaint (case #1000) where the company was found to be operating in violation of OAC rule 3745-15-07.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Saccharin Manufacturing (P010)

Activity Description: continuous saccharin production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
saccharin manufacturing process, equipped with venturi scrubbers, packed bed scrubbers, spray chambers, and a baghouse (See A.VI.1. below.)	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust from reactor charging and product load out shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.a.
	OAC rule 3745-18-06(E)(2)	81.7 lbs sulfur dioxide (SO2)/hr
	OAC rule 3745-21-07(G)	None, see A.I.2.b.below.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a baghouse capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

2.b The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. D801 shall be vented to preformed-spray wet scrubber F801.

2. T300, T320, T330, T151, T154, T152, T156, T153, T951, T952, T160, T953, and T956 shall be vented to packed bed scrubber X17FE and preformed-spray wet scrubber X17FE in series.

3. T501, T650, T735, T425, T407, T401, and X430 shall be vented to packed bed scrubber X17-seal pot and venturi scrubber X17-coupler in series.

4. The emissions from the product packout line shall be vented to baghouse F880.

5. The pressure drop across each scrubber and baghouse shall be continuously maintained within the following ranges at all times while the emissions unit is in operation:

a. packed bed scrubber X17FE: 1 to 3 inches of water;

b. venturi scrubber X17 coupler: 1 to 2 inches of water; and

c. baghouse F-880: 3 to 6 inches of water.

The pressure drop across the scrubbers or baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

6. The liquor flow rate to each scrubber shall be continuously maintained above the following minimum flow rates at all times while the emissions unit is in operation:

a. preformed-spay wet scrubber F801: not less than 10.2 gallons/minute;

b. packed bed scrubber X17FE: not less than 17 gallons/minute;

c. preformed-spray scrubber X17FE: not less than 4.3 gallons/minute;

d. packed bed scrubber X17 seal pot: not less than 5 gallons/minute; and

e. venturi scrubber X17 coupler : not less than 2.5 gallons/minute.

The scrubber liquor flow rates may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The pH of each scrubber shall be continuously maintained within the following ranges at all times while the emissions unit is in operation:

a. packed bed scrubber X17FE: 7-8;

b. packed bed scrubber X17 seal pot: 7-12; and

c. venturi scrubber X17 coupler : 8-12.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across each scrubber and baghouse, the scrubber liquor flow rate of each scrubber, and the pH of each scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across each of the scrubbers and the baghouse, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rates, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber and baghouse parameters were not maintained at or above the required levels:

a. the static pressure drop across each scrubber and the baghouse;

b. the liquor flow rate for each scrubber; and

c. the pH of the scrubber liquor for each scrubber.

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
No visible emissions from the exhaust stack of the baghouse.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the no visible emission limitations above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

2. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors and product load out shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

3. Emission Limitation:
0.030grPE/dscf from the baghouse

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

4. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within six-months of permit issuance.

b. The emission testing shall be conducted to demonstrate compliance with the sulfur dioxide emission limitation of 81.70 lbs/hr

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): 40 CFR, Part 60, Appendix A, Method 6. Alternative U.S. EPA approved test methods may be used with prior approval from the Hamilton County Department of Environmental Services.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Hamilton County Department of Environmental Services.

5. Compliance with the PE limitation specified in A.I.1 may be demonstrated by the detailed emission calculations submitted as a supplement to Cincinnati Specialties Title V permit to operate application dated June 14, 1999 .

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: IA process (P011)

Activity Description: continuous isatoic anhydride (IA) production unit: PTI 14-086

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
isatoic anhydride (IA) manufacturing, equipped with a venturi scrubber, baghouse and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-0086)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-08(B), 3745-17-11(B) and 3745- 21-09(DD).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the scrubber and incinerator stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-17-11(B)	18.2 lbs of PE/hr from the stacks associated with this emissions unit (based on Table 1 of OAC rule 3745-17-11)* *The potential to emit for this emissions unit is less than the allowable emission rate established by OAC rule 3745-17-11(B). Therefore, no monitoring, record keeping or reporting is necessary demonstrate compliance with this limit.
	OAC rule 3745-21-07(G)	None, see A.I.2.a.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-09(DD)	As provided for in OAC rule 3745-21-09(DD)(17)(a)(ii), this emission unit is exempt from the requirements of OAC rule 3745-21-09(DD)(2)-(6).

2. Additional Terms and Conditions

2.a The permittee shall not emply any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust shall be vented to a baghouse; and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

II. Operational Restrictions

1. The emissions from the IA reactor shall be vented to the "P" Off-Gas thermal oxidizer. The emissions from the IA Quencher shall be vented to the Quencher venturi scrubber. The emissions from the the blender and packaging operations shall be vented to a baghouse.

2. The pressure drop across the venturi scrubber associated with the IA Quencher shall be continuously maintained at a value greater than 1 inch of water at all times the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the venturi scrubber associated with the IA Quencher shall be continuously maintained at a value of not less than 15.5 gallons per minute at all times while the emissions unit is in operation

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

II. Operational Restrictions (continued)

5. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

6. The pressure drop across the baghouse associated with the IA blender and packaging operations shall be maintained within the range that shall be determined from manufacturer's specifications and recommendations while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the venturi scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.; and

b. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

3. The permittee shall properly install (within 3 months after permit issuance), operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

6. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber; and

b. the scrubber liquor flow rate.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal ozidizer did not comply with the temperature limitation specified above.

3. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

4. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying materials (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

5. Prior to any changes in the production of isatoic anhydride, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as heavy liquids.

6. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber and baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible particulate emissions from the scrubber stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in A.III.5.

3. Emission Limitation:
18.2 lbs of PE/hr from the stacks

Applicable Compliance Method:
If required, compliance with the PE limitation shall be demonstrated by stack testing conducted in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Saccharin Spray Dryer (P013)

Activity Description: continuous spray dryer for sodium, calcium and insoluble saccharin

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
saccharin spray dryer with cyclonic scrubber and dust bag (fabric filter placed over drum while load out is occurring)	OAC rule 3745-31-05(A)(3) (PTI 14-077)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-08(B) and 38745-17-11(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the product pack-out for this emissions unit shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a.
	OAC rule 3745-17-11(B)	2.2 lbs of PE/hr from the scrubber stack (based on Table 1 of OAC rule 3745-17-11)

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and

iii. all fugitive dust captured shall be vented to a fabric filter.

II. Operational Restrictions

1. The PE from product recovery cyclone S-1001 shall be vented to cyclonic scrubber X17-X-1005.

2. The pressure drop across cyclonic scrubber X17-X-1005 shall be continuously maintained at a value of not less than 8 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to cyclonic scrubber X17-X-1005 shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The dust bag shall be securely attached to the collection drum. There shall be no visible PE from the dust bag.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber; and

b. the scrubber liquor flow rate.

IV. Reporting Requirements (continued)

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from the scrubber stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitation:
2.2 lbs of PE/hr from the scrubber stack

Applicable Compliance Method:
If required, compliance with the PE limitation shall be demonstrated by stack testing conducted in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

3. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Anthranilic Acid Manufacturing (P014)

Activity Description: batch reaction/continuous drying anthranilic acid (AA) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
anthranilic acid (AA) manufacturing system reactor equipped with a thermal oxidizer and scrubber.	OAC rule 3745-31-05(A)(3) (PTI 14-05234)	organic compounds (OC) emissions from the AA reactor: stack OC: 37.41 lbs/day, 12.5 lbs/batch fugitive OC: 2.34 lbs/day, 0.8 lb/batch total OC: 7.25 tons per year (TPY) particulate emissions (PE)* from the AA reactor: fugitive emissions: 1.26 lbs/day, 0.4 lb/batch total emissions: 0.23 TPY PM from the NaPMC reaction: fugitive emissions: 29.25 lb/day 9.8 lbs/batch total emissions: 5.34 TPY See terms A.II.5 and A.II.8. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(B)(1), 3745-17-08(B), 3745-21-09(DD), and 3745-21-09(YY). * Assume all PE is PM10.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	See term A.II.7.
	OAC rule 3745-21-09(DD)	See terms A.II.6 and A.III.5.
	OAC rule 3745-21-09(YY)	Any VOC emissions from the reactor process vent streams from this emissions unit shall be vented to an enclosed combustion device that is designed and operated to reduce the VOC emissions by at least 95 percent, by weight.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
anthranilic acid (AA) manufacturing system (spray dryer equipped with a wet scrubber)	OAC rule 3745-31-05(A)(3) (PTI 14-05234)	OC emissions from the AA spray dryer: stack OC: 9.84 lbs/day fugitive OC: 30.48 lbs/day total OC: 7.36 TPY PE* from the AA spray dryer: stack emissions: 0.72 lb/hour, 17.28 lbs/day fugitive emissions: 20.5 lb/day total emissions: 6.89 TPY PM The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), 3745-17-07(B)(1), 3745-17-08(B)(3), and 3745-21-09(DD). * Assume all PE is PM10.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-09(DD)	See terms A.II.6 and A.III.5.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the production limitation, the use of a thermal oxidizer to control the reactor emissions, and the use of a scrubber to control spray drying emissions.

2. Additional Terms and Conditions (continued)

2.b The lb(s)/batch allowables in term A.I.1 above are based upon maximum values listed in the air permit to install application for this permit. If these maximum values change, then the permittee shall implement term and condition A.IV.6.

2.c When loading solid materials into the reactors, particulate emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The permittee shall operate the scrubber (AA-05) and thermal oxidizer (AA-01) according to the manufacturers' specifications.

2. The pressure drop across scrubber AA-05 shall be continuously maintained at a value of greater than 5 inches of water, or the value established during the most recent performance test which demonstrated compliance, at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The liquor flow rate of scrubber AA-05 shall continuously maintained at a value of not less than 39 gallons per minute, or the value established during the most recent performance test which demonstrated compliance, at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

5. The maximum number of batches produced in this emissions unit shall not exceed 3 per day.

6. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

7. The use of photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

8. Emissions from the AA product recovery cyclone, the product blender, and product packout shall be vented to the packed bed AA scrubber.

9. The emissions from T-300 shall be vented to the thermal oxidizer.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across scrubber AA-05, in inches of water, on a once per shift basis; and

b. the liquor flow rate of scrubber AA-05, in gallons per minute, on a once per shift basis.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within thermal oxidizer AA-01 when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

All 3-hour blocks of time during which the average combustion temperature within thermal oxidizer AA-01, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.

3. The permittee shall collect and record the following information for each day:

A log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall maintain daily records of the number of batches produced and the type of material produced.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

6. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is a photochemically reactive material, as identified in OAC rule 3745-21-01(C)(5).

7. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels as specified in term A.II.:

a. The static pressure drop across scrubber AA-05.

b. The liquor flow rate of scrubber AA-05.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within thermal oxidizer AA-01 did not comply with the temperature limitation specified above in term A.II.4.

3. The permittee shall submit quarterly deviation (excursion) reports that identify the each day during which the number of batches of material produced exceeded three and the actual number of batches produced for each such day.

4. Prior to any changes in the production of anthranilic acid, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as heavy liquids.

5. Prior to any change in the materials listed in this application, the permittee shall provide documentation to this agency to demonstrate that they will still be able to comply with the emission limitations outlined in this permit. If the emission limitations will be exceeded by the change, the permittee shall submit a new permit to install application.

6. The permittee shall notify the Hamilton County Department of Environmental Services in writing identifying each day during which any photochemically reactive material (as defined in OAC rule 3745-21-01(C)(5)) was employed in this emissions unit. This report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of organic compound emissions emitted each such day. This report shall be submitted to the Hamilton County Department of Environmental Services within 45 days after the exceedance occurs.

7. The quarterly deviation reports shall be submitted in accordance with the reporting requirements as specified in Part 1 - General Terms and Conditions A.1.c.

8. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. Emission Limitation:
Fugitive emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

3. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in term A.III.5.

4. Emission Limitation:
All VOC emissions from the reactor process vent streams reduced by at least 95 percent, by weight.

Applicable Compliance Method:
Compliance with the minimum VOC reduction requirement shall be demonstrated by the stack testing required in section A.V.6 of these terms and conditions.

5. Compliance with the PE/PM10 and OC emission limitations outlined in this permit shall be demonstrated by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in the PTI application 14-05234 submitted 10/23/01. The lbs/batch numbers are based on the calculations submitted in the above noted PTI application.

6. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after issuance of the permit, the third year of the permit, and within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulate matter from the AA scrubber and the organic compound destruction efficiency of the thermal oxidizer. Testing of the thermal oxidizer shall include a test of the control efficiency when only emissions unit P014 is vented to the oxidizer and an additional test when all emissions units that are vented to the thermal oxidizer are operating (P008, P015, P022, P901 and P902).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

For Particulate Emissions from the AA Scruber, Methods 1-5 of 40 CFR Part 60, Appendix A

The 95% OC control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or other approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

V. Testing Requirements (continued)

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methyl Anthranilate Manufacturing (P022)

Activity Description: continuous Methyl Anthranilate (MA) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methyl anthranilate manufacturing process, equipped with a cartridge filter and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-2103)	4.04 lbs organic compounds(OC)/hr* 17.7 TPY OC* 0.42 lb particulate emissions (PE)/hr* 1.84 TPY PE* *The lbs/hr and TPY emission limitations established in PTI 14-2103 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure compliance. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-21-09(YY).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-09(YY)	See A.I.2.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a All VOC emissions from the reactor process vent streams from this emissions unit shall be vented to an enclosed combustion device that is designed and operated to reduce the VOC emissions by at least 95 percent, by weight.

II. Operational Restrictions

1. The emissions from T-201 shall be vented to the cartridge filter (fabric filter) at all times.

2. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

b. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

2. The permittee shall perform quarterly inspections of the cartridge filter controlling this emissions unit. At a minimum, these quarterly inspections shall include the following:

a. a visual leak check of the duct work leading to the cartridge filter to ensure no leaks are occuring.

b. a visual inspection of the cartridge filter to look for holes, puntures, perforations, or any other indication of problems leading to the filter not functioning properly.

c. a check of any visible emissions exiting the cartridge filter.

The permittee shall collect and record the results of this inspection in a log book. If any problems are noted during the quarterly inspection, the measures taken to correct the problem should be noted.

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the fabric filter serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified in A.II.2.

IV. Reporting Requirements (continued)

2. The permittee shall submit quarterly deviation (excursion) reports that identify all quarters the inspection of the cartridge filter required in A.III.2 did not take place.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the cartridge filter serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitation:
All VOC emissions from the reactor process vent streams reduced by at least 95 percent, by weight.

Applicable compliance method:
This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

3. Emission Limitations:
4.04 lbs of OC)/hr and 17.7 TPY of OC
0.42 lb of PE/hr and 1.84 TPY of PE

Applicable Compliance Methods:
Compliance with the PE/PM10 and OC emission limitations outlined in this permit shall be demonstrated by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in the PTI application 14-02103.

If required, compliance with the lbs/hr emission limitations shall be demonstrated by stack testing conducted in accordance with the following methods:

For PE, Methods 1 - 5 of 40 CFR, Part 60, Appendix A
For OC, Methods 1 - 4 and 25 or 25A of 40 CFR, Part 60, Appendix A

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methyl anthranilate manufacturing process with cartridge filter and thermal oxidizer	Air Toxics Policy	See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 3.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 10.58
MAGLC (ug/m3): 3743

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Recovery Unit (P023)

Activity Description: continuous methanol recovery unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methanol recovery unit	OAC rule 3745-31-05(A)(3) (PTI 14-3255)	.65 lb of organic compounds(OC)/hr* 2.85 TPY OC* *The lb/hr and TPY emission limitations established in PTI 14-3255 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance.
	OAC rule 3745-21-07(G)	None (See A.II.1.)
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

IV. Reporting Requirements

1. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying materials (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 45 days after any photochemically reactive material was employed.

V. Testing Requirements

1. Emission Limitations:
0.65 lb of OC/hr and 2.85 TPY of OC

Applicable Compliance Method:
If required, compliance with the lbs/hr emission limitation shall be demonstrated by stack testing conducted in accordance with Methods Methods 1 - 4 and 25 or 25A of 40 CFR, Part 60, Appendix A.

As long as compliance with the hourly limitation is maintained, compliance with the annual limitation shall be ensured (the annual limitation was determined by multiplying the hourly emission rate by 8760hrs, and then dividing by 2000 lbs/ton).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methanol recovery unit	Air Toxics Policy	See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 3.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 10.58
MAGLC (ug/m3): 3743

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals System 300/400 (P025)

Activity Description: Initially operated under P001. PTI 14-3752:10/12/95.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical systems 300 and 400, equipped with two venturi scrubbers and one packed bed scrubber (scrubbers are not in series)	OAC rule 3745-31-05(A)(3) (PTI 14-3752)	12.4 lbs/day ammonia, 2.26 TPY ammonia 2.88 lbs/day organic compounds (OC), 0.52 TPY OC 1.06 lbs/day acid vapor, 0.20 TPY acid vapor 7.01 lbs/day SO2, 1.28 TPY SO2 0.22 lb/day particulate emissions(PE)/PM10, 0.04 TPY PE/PM10 The requirements of this rule also includes compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.a.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of the fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions.

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers; and

iv. when loading solid materials into the reactors, fugitive PE shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The number of batch starts per day shall not exceed the following:

a. system 300 Reactors: 3 ; and
b. system 400 Reactors: 4.

2. The emissions from reactors T330, T350, and T370 shall be vented to packed bed scrubber E830.

3. The emissions from reactors T400, T420, and T451 shall be vented to venturi scrubber P445.

4. When XBINX is being produced, the emissions from reactors T350 and T370 shall be vented to packed bed scrubber E830 or venturi scrubber P356.

II. Operational Restrictions (continued)

5. The pressure drop across scrubbers E830, P445, and P356 shall be continuously maintained at a value of not less than the following at all times while the emissions unit is in operation:

a. E830: 3.5 inches of water;

b. P445: 1 inch of water; and

c. P356: 2 inches of water.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The scrubber liquor flow rate for scrubbers E830, P445, and P356 shall be continuously maintained at a value of not less than the following at all times while the emissions unit is in operation:

a. E830: 34.8 gallons of water per minute;

b. P445: to be determined*; and

c. P356: to be determined*.

*The minimum scrubber liquor flow rates shall based on the manufacturer's specification and recommendations.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The pH of the scrubber liquor for scrubbers E830, P445, and P356 shall be continuously maintained at the following levels at all times while the emissions unit is in operation:

a. E830: 6-10;

b. P445: not less than 6; and

c. P356: not less than 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each day:

a. the number of batch starts in system 300 reactors;

b. the number of batch starts in system 400 reactors: and

c. the products produced in each of the system 300 and 400 reactors.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Within 90 days of the final issuance of this permit, the permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor for scrubbers E830, P445, and P356 while the emissions unit is in operation. For scrubbers E830, P445, and P356, the monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across each scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate for each scrubber, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for each scrubber, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this associated emissions unit was in operation.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all days during which the batch limitations outlined in A.II.1. were exceeded.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels:

a. the static pressure drop across each of the scrubbers;

b. the liquor flow rates for each of the scrubbers; and

c. the pH of the scrubber liquor for each of any of the scrubbers.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitations:
12.4 lbs/day Ammonia, 2.26 TPY Ammonia
2.88 lbs/day organic compounds (OC), 0.52 TPY OC
1.06 lbs/day Acid vapor, 0.20 TPY Acid vapor
7.01 lbs/day SO2, 1.28 TPY SO2
0.22 lb/day particulate emissions(PE)/PM10, 0.04 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations above by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-3752 submitted 12/16/94 and revised 8/11/95.

3. Emission Limitation:
Visible emissions of fugitve dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical systems 300 and 400 w/ two venturi scrubbers and one packed bed scrubber (scrubbers are not in series)	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit, P025 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Ammonia
TLV (ug/m3): 17,000
Maximum Hourly Emission Rate (lbs/hr): 2.77
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 247.6
MAGLC (ug/m3): 404.76

Pollutant: SO2
TLV (ug/m3): 5200
Maximum Hourly Emission Rate (lbs/hr): .52
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 35.88
MAGLC (ug/m3): 124

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals System II (P027)

Activity Description: Specialty Chemical manufacturing system; PTI No. 14-4460

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system II, equipped with a packed bed scrubber	OAC rule 3745-31-05(A)(3) (PTI 14-4460)	0.38 lb volatile organic compound (VOC)/hr from the exhaust gases from packed bed scrubber X289* 1.7 lbs VOC/hr from vent P200* 8.8 lbs VOC/day from fugitive emissions* 1.64 TPY total annual VOC (stack emissions from P200 and X289 + fugitive)* 9.11 lbs particulate emissions (PE)/PM10/day* 1.66 TPY PE/PM10* *The lbs/hr and TPY emission limitations established in PTI 14-4460 were based on the emission unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance. See A.I.2.a and A.I.2.b. The requirements of this rule also includes compliance with the requirements of OAC rules 3745-17-07(B)(1), 3745-17-07(A) and 3745-17-08(B).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.c.
	OAC rule 3745-21-09(YY)	See A.I.2.c.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain the packed bed scrubber in a manner that will reduce the VOC emissions by a minimum of 98 percent by weight.

2.b The permittee shall use a nitrogen-purged centrifuge.

2.c The permittee shall employ reasonably available control measures (RACM) at all times for the control of the fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions.

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubber; and

iv. when loading solid materials into the reactors, fugitive PE shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from reactors T200, T220, T230, T280, and X-200 shall be vented to packed bed scrubber X289.

2. The pressure drop across packed bed scrubber X289 shall be continuously maintained at a value of not less than .13 inches of water during all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

3. The scrubber liquor flow rate for scrubber X289 shall be continuously maintained at a value of not less than 3.3 gallons of water per minute during all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. For packed bed scrubber X289, the permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rates for scrubber, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels:

a. the static pressure drop across the scrubber; and

b. the liquor flow rate for the scrubber.

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from the scrubber stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after issuance of the permit.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for volatile organic compounds from scrubber X289 and P200 listed in A.I.1 of this permit. Testing of scrubber X289 shall also include testing of the inlet to determine the control efficiency for VOC from the scrubber.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or the approved alternative test protocol (e.g., "the mass balance protocol approved on 10/25/95"). The test methods and procedures selected to determine the mass emission rate shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

V. Testing Requirements (continued)

3. Emission Limitations:
0.38 lb of VOC/hr from the exhaust gases from packed bed scrubber X289 and 1.7 lbs VOC/hr from vent P200

8.8 lbs of VOC/day from fugitive emissions and 1.64 TPY total annual VOC (stack emissions form P200 and X289 + fugitive)

9.11 lbs of PE/PM10/day and 1.66 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations by the stack test results required in A.V.2. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4460 submitted 9/29/97 and revised 2/25/98.

4. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system II with packed bed scrubber	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit, P027 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol from scrubber X289
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 0.38
Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 177.2
MAGLC (ug/m3): 3742.86

Pollutant: Methanol from P200
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 1.7
Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 269.2
MAGLC (ug/m3): 3742.86

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Tolyltriazole Manufacturing (P901)

Activity Description: continuous tolyltriazole (TT) production unit, previously P003

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
tolyltriazole manufacturing, equipped with a NOx venturi scrubber and NOx packed column scrubber in series, a product packout venturi scrubber, carbon adsorber, and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-4456)	See A.I.2. and A.II. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B)(3).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.d.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The following emission limitations for this emissions unit shall not be exceeded when the primary control plan is used:

i. For the thermal oxidizer stack (Vent Y)- continuous process:

(a) 0.085 pound per hour organic compounds(OC), 0.37 TPY OC;
(b) 8.71 pounds per hour nitrogen oxides(NOx), 38.15 TPY NOx; and
(c) 0.001 pound per hour acid vapor, 0.0044 TPY acid vapor.

ii. From all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC from other stacks combined - continuous process.

iii. For the manufacture of batch products:

(a) 1.20 pound per batch OC, 0.25 TPY OC; and
(b) 0.39 pound per batch NOx, 0.37 TPY NOx.

iv. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Primary Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Primary Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2. Additional Terms and Conditions (continued)

2.b The following emission limitations for this emissions unit shall not be exceeded when the primary back-up control plan is used:

i. For the thermal oxidizer stack (Vent Y)- continuous process:

(a) 0.079 pound per hour OC, 0.35 TPY OC; and
(b) 1.24 pounds per hour NOx, 5.43 TPY NOx.

ii. For the NOx Scrubber Outlet (venturi and packed column in series - either Vent A or X) - continuous process:

(a) 0.12 pound per hour OC, 0.53 TPY OC;
(b) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(c) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

iii. From all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC from other stacks combined - continuous process.

iv. For the manufacture of batch products:

(a) 1.20 pounds per batch OC, 0.25 TPY OC; and
(b) 0.39 pound per batch NOx, 0.37 TPY NOx.

v. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Primary Back-Up Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Primary Back-Up Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2. Additional Terms and Conditions (continued)

2.c The following emission limitations for this emissions unit shall not be exceeded when the secondary back-up control plan is used:

i. For the thermal oxidizer by-pass stack (Vents X and A combined)- continuous process:

(a) 0.91 pound per hour OC, 3.99 TPY OC;
(b) 0.26 pounds per hour PE/PM10, 1.14 TPY PE/PM10;
(c) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(d) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

ii. For the NOx scrubber outlet (venturi and packed column in series; back-up = not combined with Vent X) - continuous process:

(a) 0.12 pound per hour OC, 0.53 TPY OC;
(b) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(c) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

iii. For the carbon adsorber outlet, 0.053 pound per hour OC, 0.23 TPY OC - continuous process.

iv. For all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC - continuous process.

v. For the manufacture of batch products, 21.79 pounds per batch OC, 4.51 TPY OC.

vi. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Secondary Back-Up Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Secondary Back-Up Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2.d The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control the fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers;

iv. when loading solid materials into the reactors, fugitive emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor; and

v. when product grinding or product loadout is occurring, the capture efficiency of the collection and control system venting to the TT dust scrubber shall be sufficient to minimize or eliminate visible emissions of fugitive dust.

II. Operational Restrictions

1. The primary control plan as specified in A.I.2.a. shall be used at all times except for unforseeable circumstances due to malfunctions, weather, etc. that may hinder normal operating conditions.

2. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

3. The pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber operated in series shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The NOx venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 30 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

5. The NOx packed column scrubber liquor flow rate shall be continuously maintained at a value of not less than 20 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The pH of the NOx venturi scrubber liquor shall be maintained at or above 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The permittee shall determine carbon adsorber breakthrough by using Draeger tubes or other approved methods by Hamilton County Department of Environmental Services. A reading of 5 PPM total organic compounds exiting the carbon drum shall indicate breakthrough has occurred. At this time either a different control option identified within this permit shall be utilized or new carbon shall be added.

The pressure drop across the product packout venturi scrubber shall be continuously maintained at a value between 4 and 6 inchs of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

8. The product pack out venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 21 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

2. The permittee shall properly operate and maintain equipment to continuously monitor the NOx venturi scrubber water flow rate, the NOx packed column scrubber flow rate, the product packout venturi scrubber, the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, and the pH of the scrubber liquor for the NOx venturi scrubber, and the pressure drop across the product pack out venturi scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the scrubber liquor flow rate for the NOx venturi scrubber, in gallons per minute, on a once per shift basis; and

b. the scrubber liquor flow rate for the NOx packed column scrubber, in gallons per minute, on a once per shift basis;

c. the scrubber liquor flow rate for the product packout venturi scrubber, in gallons per minute, on a once per shift basis;

d. the pH of the scrubber liquor for the NOx venturi scrubber , on a once per shift basis;

e. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, in inches of water, on a once per shift basis;

f. the pressure drop across the product packout venturi scrubber, in inches of water, on a once per shift basis; and

g. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

3. On days when the Secondary Backup Control option identified in A.I.2.c is utilized, the permittee shall monitor the concentration level of the organic compounds in the exhaust stream from the carbon adsorption system on a once per shift basis using a Draeger tube or other method approved by the Hamilton County Department of Environmental Services.

The permittee shall collect and record the results of all measurements for organic compounds recorded on days when the Secondary Backup Control Plan is utilized. For any organic compound reading greater than 5 PPM, the permittee shall also note what corrective action was taken.

4. The permittee shall collect and record the following information on a monthly basis:

a. the time and date a control option other than the primary control option defined in A.I.2.a. was utilized, and what control option was utilized:

b. the time and date the primary control option resumed; and

c. the reason the primary control option had to be discontinued.

5. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following NOx venturi scrubber and NOx packed column scrubber parameters were not maintained at or above the required levels:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber;

b. the scrubber liquor flow rate for the NOx venturi scrubber;

c. the scrubber liquor flow rates for the NOx packed column scrubber; and

d. the scrubber liquor pH of the NOx venturi scrubber.

3. The permittee shall submit quarterly reports that summarize the information collected and recorded in A.III.4.

4. The permittee shall submit quarterly deviation (excursion) reports that identify all times when carbon breakthrough was detected and the carbon was not changed.

5. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Back-Up Secondary Control Plan was utilized and the OC concentration exiting the carbon absorption system was greater than 5 PPM. This report should also note any corrective actions taken.

IV. Reporting Requirements (continued)

6. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted 2.5 years after issuance of the permit, and within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emssion rate(s) for organic compounds and NOx from the thermal oxidizer when the primary control option is being utilized. Testing of the thermal oxidizer shall include a test of the control efficiency when only this emissions unit is vented to the oxidizer in addition to a test when all emissions units that are vented to it are operating (P008, P014, P015, P022 and P902). The emissions testing shall be done when the primary control plan is being followed.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

for NOx, Method 7E of 40 CFR Part 60, Appendix A
for OC, Method 25 of 40 CFR Part 60, Appendix A.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

V. Testing Requirements (continued)

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

3. If required, the permittee shall demonstrate compliance with the emission limitations outlined in Sections A.2.a through A.2.c of this permit by the stack test results required in A.V.2. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4456 submitted 9/22/97 and revised 1/9/98.

4. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
tolyltriazole manufacturing with two venturi scrubbers, packed column scrubber, carbon adsorber, and thermal oxidizer	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit P901 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Tolune from NOx scrubber (vent A)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.91
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 189.1
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from TO by-pass (vent X)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.91
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 39.4
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from hot oil loops (vent B)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.71
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 212.4
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from carbon adsorber (vent C)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.053
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 15.9
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from N or W still (vent B)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): .0068
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.14
MAGLC (ug/m3): 2685.7

III. Monitoring and/or Record Keeping Requirements (continued)

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled: and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Sodium Tolyltriazole Manufacturing (P902)

Activity Description: PTI 14-4534 issued 6/3/98 for production of sodium tolyltriazole via reaction and packout.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sodium tolyltriazole manufacturing, equipped with a venturi scrubber, packed column scrubber, and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-4534)	0.11 lb/day organic compounds(OC) 0.02 TPY OC 10.0 lbs/day nitrogen oxides (NOx) 1.83 TPY NOx 0.24 lb/day particulate emissions(PE)/PM10 0.045 TPY PE/PM10 See A.I.2.c. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain a wet scrubber in a manner which will reduce the NOx emissions by a minimum of 75 percent, by weight.

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control the fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers; and

iv. when loading solid materials into the reactors, fugitive emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from T301 shall be vented to the NOx venturi scrubber, the NOx packed column scrubber, and the thermal oxidizer, operated in series.

2. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

3. The pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber operated in series shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The NOx venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 30 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

5. The pH of the NOx venturi scrubber liquor shall be maintained at or above 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The NOx packed column scrubber liquor flow rate shall be continuously maintained at a value of not less than 20 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

2. The permittee shall properly operate and maintain equipment to continuously monitor the NOx venturi scrubber water flow rate, the NOx packed column scrubber flow rate, the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, and the pH of the scrubber liquor for the NOx venturi scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber on a once per shift basis;

b. the scrubber liquor flow rate for the NOx venturi scrubber, in gallons per minute, on a once per shift basis;

c. the scrubber liquor flow rate for the NOx packed column scrubber, in gallons per minute, on a once per shift basis;

d. the pH of the scrubber liquor for the NOx venturi scrubber , on a once per shift basis; and

e. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following NOx venturi scrubber and NOx packed column scrubber parameters were not maintained at or above the required levels:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber;

b. the scrubber liquor flow rates for the NOx venturi scrubber;

c. the scrubber liquor flow rates for the NOx packed column scrubber; and

d. the scrubber liquor pH of the NOx venturi scrubber.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after the issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the 75% control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system)for NOx across the inlet of the venturi scrubber and outlet of the packed column scrubber.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx, Method 7E of 40 CFR Part 60, Appendix A

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

3. Emission Limtations:
0.11 lb/day of OC and 0.02 TPY OC
10.0 lbs/day of NOx and 1.83 TPY NOx
0.24 lb/day of PE/PM10 and 0.045 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations by the stack test results required in A.V.2. and A.V.4. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4534 submitted February 9, 1998.

4. This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

5. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforceable Section

1. 40 CFR Part 68 is an applicable requirement for this facility. The permittee shall comply with the Risk Management Plan submitted to the Hamilton County Department of Environmental Services.

2. The permittee is subject to the applicable emission limitation(s) and/or control measures, operational restrictions, monitoring and/or record keeping requirements, reporting requirements, testing requirements and the general and/or other requirements specified in National Emission Standards for Hazardous Air Pollutants (NESHAP) for 40 CFR Part 63, Subpart DDDDD, Industrial/Commercial/Institutional Boilers and Process Heaters (including the Tables and Appendices referenced in Subpart DDDD), which are included in the text of Attachment 2 hereto, and are hereby incorporated into this permit as if fully rewritten.

Ordinarily, these requirements would be incorporated into Part II of this Title V permit; however, incorporating Subpart DDDDD into Part II of this Title V permit was not practical due to technical incompatibilities and the limitations of the STARS program. In addition, numerous difficulties were encountered in attempting to copy and paste the Subpart's tables and/or equations into STARS format.

The following emissions units in this permit may be subject to the aforementioned requirements:

B001
B003

3. The permittee is subject to the applicable emission limitation(s) and/or control measures, operational restrictions, monitoring and/or record keeping requirements, reporting requirements, testing requirements and the general and/or other requirements specified in 40 CFR Part 63 Supbart FFFF Miscellaneous Organic Chemical Production and Processes (MON). In accordance with 40 CFR Part 63, Subpart FFFF (including the Tables and Appendices referenced in Subpart FFFF), which are included in the text of Attachment 1 hereto, and are hereby incorporated into this permit as if fully rewritten.

Ordinarily, these requirements would be incorporated into Part II of this Title V permit; however, incorporating Subpart FFFF into Part II of this Title V permit was not practical due to technical incompatibilities and the limitations of the STARS program. In addition, numerous difficulties were encountered in attempting to copy and paste the Subpart's tables and/or equations into STARS format.

The following emissions units in this permit may be subject to the aforementioned requirements:

P001
P006
P010
P014
P022
P023
P024
P025
P027

A. State and Federally Enforceable Section (continued)

4. The following insignificant emissions units are located at this facility:

P004 Fine Chemicals Manufacturing System No. 5
P015 HPT Manufacturing (PTI 14-03494)
P026 Fine Chemicals Manufacturing System No. 14 (PTI 14-03989)
T004 Sulfuric Acid Storage Tank (PTI 14-02532)
T006 o-Toluenediamine Storage Tank (PTI 14-02687)
T007 Acetic Acid Storage Tank (PTI 14-02687)
T008 o-Phenylenediamine Storage Tank (PTI 14-02687)
T009 Sodium Methylate Storage Tank (PTI 14-02688)
T010 Methyl Anthranilate Storage Tank (PTI 14-03221)
F001 Coal Unloading
Z004 Fine Chemicals Pilot Plant
Z005 Building 38 Chlorine Vaporizer
Z006 Building 35 Chlorine Vaporizer
Z101 Emergency Generator
Z102 Diesel Engine for Fire Pump
Z103 Process Heater X-420
Z104 Process Heater X-470
Z105 Process Heater X-170
Z201 CMB Storage Tank
Z204 p-Cresidine Storage Tank
Z205 Dimethyl sulfate Storage Tank
Z207 300,000-Gallon Fuel Oil Storage Tank
Z208 10,000-Gallon Fuel Oil Storage Tank
Z209 20,000-Gallon Fuel Oil Storage Tank
Z211 13,000-Gallon Hydrochloric Acid Storage Tank
Z212 13,000 Gallon Hydrochloric Acid Storage Tank
Z214 m-nitro-p-cresol Storage Tank
Z216 o-nitro aniline Storage Tank
Z217 2-nitro-4-methylanisole Storage Tank
Z223 Sodium Tolyltriazole Storage Tank
Z225 Acetic Acid Storage Tank
Z229 Sulfuric Acid Storage Tank
Z301 TT-50S Tank Wagon Filling
Z302 HCl Tank Wagon Filling
Z304 HCl Drum Filling Station
Z399 Gasoline Dispensing
Z401 Nauta Mixer
Z402 DeVine Dryer
Z403 Tray Dryer D-420
Z404 Tray Dryer D-421
Z405 Fitzmill Dryer D-500
Z503 Pritchard Cooling Tower
Z601 TT North Dowtherm Unit
Z602 TT West Multitherm Unit
Z603 BT/HPT Multitherm Unit

A. State and Federally Enforceable Section (continued)

Z701 Bldg 37 Lab Hood-Research Lab, First Floor, West Wall
Z702 Bldg 37 Lab Hood-Research Lab, First Floor, South Wall
Z703 Bldg 37 Lab Hood-Research Lab, Second Floor, West End-North
Z704 Bldg 37 Lab Hood-Research Lab, Second Floor, West End-South
Z705 Bldg 37 Lab Hood-Research Lab, Second Floor, Center-West
Z706 Bldg 37 Lab Hood-Research Lab, Second Floor, Center-East
Z707 Bldg 37 Lab Hood-Research Lab, Second Floor, East End-West
Z708 Bldg 37 Lab Hood-Research Lab, Second Floor, East End-East
Z710 QA Lab Hood-Main Lab, North Wall
Z711 QA Lab Hood-Main Lab, West Wall
Z712 QA Lab Hood-Sample Room, North Wall
Z713 QA Lab Hood-Sample Room, East Wall
Z714 QA Lab Hood-NPC Area, East Wall
Z720 In-Process Test Hood-IA Control Room
Z721 In-Process Test Hood-Bldg 35, Saccharin Control Room
Z722 In-Process Test Hood-Bldg 38 Lab
Z901 Building 12 Parts Washer-Powerhouse
Z902 Building 24 Parts Washer-Maintenance Shop
Z903 Drum Warmer-Bldg 38, Third Floor, East
Z904 Drum Warmer-Bldg 40, Second Floor, East
Z910 Roadways and Parking Areas

Each insignificant emissions unit at this facility must comply with all applicable State and federal regulations, and well as any emission limitations and/or control requirements contained within the identified permit to install for the emissions unit. Insignificant emissions units listed above that are not subject to specific permit to install requirements are subject to one or more of the applicable requirements contained in the federally-approved versions of OAC Chapters 3745-17, 3745-18, and/or 3745-21.

B. State Only Enforceable Section

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Storage Tank (T001)

Activity Description: 16,500 gallon fixed roof methanol storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
16,500-gallon methanol storage tank	OAC rule 3745-31-05(A)(3) (PTI 14-1703)	1.56 TPY of organic compounds (OC) *The TPY emission limitation established in PTI 14-1703 was based on the emission unit's potential to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance.
	40 CFR Part 60, Subpart Kb	See A.III.1.
	OAC rule 3745-21-07(D)	The permittee shall employ a submerged fill pipe when loading volatile photochemically reactive materials.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.116b(a) and (b), the Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the OC emission limitation of 1.56 TPY may be demonstrated by the equations and methods specified in AP-42, Fifth Edition, Section 7.1(revised 1/95).

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Boiler No. 1 (B001)

Activity Description: natural gas/fuel oil boiler - oil conversion circa 1974

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
62.9 MMBtu/hr natural gas, No. 2 oil-fired boiler	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/MMBtu of actual heat input
	OAC rule 3745-18-37(FF)	2.0 lbs of SO2/MMBtu of actual heat input
	40 CFR Part 63, Subpart DDDDD	See Attachment 2 of this permit.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall burn only natural gas and No. 2 fuel oil in this emissions unit.

2. The quality of oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable SO2 emission limitation specified in section A.I.1 above.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas and/or No. 2 fuel oil, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

III. Monitoring and/or Record Keeping Requirements (continued)

2. For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate (in lbs/mmBtu). (The sulfur dioxide emission rate shall be calculated in accordance with the formula specified in OAC rule 3745-18-04(F). A shipment may be comprised of multiple tank truck loads from the same supplier's batch, or may be represented by single or multiple pipeline deliveries from the same supplier's batch, and the quality of the oil for those loads or pipeline deliveries may be represented by a single batch analysis from the supplier.

The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas or No. 2 fuel oil was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of oil which is received for burning in this emissions unit. The permittee's or oil supplier's analyses shall document the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil. The following information shall also be included with the copies of the permittee's or oil supplier's analyses:

a. the total quantity of oil received in each shipment (gallons).

b. the calculated sulfur dioxide emission rate (pounds/MMBtu) for each shipment of oil (this calculation shall be performed using the equation specified in OAC rule 3745-18-04(F)).

These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall cover the oil shipments received during the previous calendar quarters.

V. Testing Requirements

1. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. Emission Limitation:
0.020 lb of PE/MMBtu of actual heat input

Applicable compliance method when burning only natural gas:
For the use of natural gas, compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (MM cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 1.9 lbs filterable PE/MM cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

Applicable compliance method when burning No. 2 fuel oil:
For the use of No. 2 fuel oil, compliance may be determined by multiplying the maximum fuel oil capacity of the emissions unit (gallons/hr) by the AP-42, Fifth Edition, Section 1.3, Table 1.3-1 (revised 9/98) emission factor of 2.0 lbs filterable PE/1000 gallons, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

If required, the permittee shall demonstrate compliance with the lb/MMBtu emission limit above pursuant to OAC rule 3745-17-03(B)(9).

3. Emission Limitation:
2.0 lbs/MMBtu of sulfur dioxide

Applicable Compliance Method when No.2 fuel oil:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.2.b of this permit.

Applicable compliance method when burning natural gas:
For the use of natural gas, compliance may be determined by multiplying the hourly gas burning capacity of the emissions unit (MM cu. ft/hr) by the AP-42, Fifth Edition, Section 1.4, Table 1.4-2 (revised 7/98) emission factor of 0.6 lb SO2/MM cu. ft, and then dividing by the maximum hourly heat input capacity of the emissions unit (MMBtu/hr).

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with USEPA reference Method 6, Method 6A, Method 6B, or Method 6c, whichever is appropriate, of 40 CFR Part 60, Appendix A.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Phthalic Anhydride Storage Tank (T003)

Activity Description: 30,000 gallon storage tank for phthalic anhydride

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
30,000-gallon phthalic anhydride storage tank with ambient air sublimate system	OAC rule 3745-31-05(A)(3) (PTI 14-1969)	0.38 TPY of organic compound (OC) See A.I.2.
	40 CFR Part 60, Subpart Kb	See A.III.1. and A.III.2.
	OAC rule 3745-21-07(D)	The permittee shall employ a submerged fill pipe when loading volatile photochemically reactive materials.

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain a sublimate containment device in a manner that will reduce the OC emissions by a minimum of 90% by weight.

II. Operational Restrictions

1. The ambient air sublimate system shall be utilized at all times this emission unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.116b(a) and (b), the permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

2. In accordance with 40 CFR 60.116b(a) and (b), the permittee shall maintain a record of the volatile organic liquid stored, the period of storage, and the maximum true vapor pressure of that volatile organic liquid during the respective storage period.

3. The permittee shall mainain an operations log documenting the use of the ambient air sublimate system. Should the sublimate system not be utilized, the time, date, and the reason for its non-use shall be recorded.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature deviation (excursion) reports that identify all times the ambient air sublimation system was not utilized.

IV. Reporting Requirements (continued)

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Compliance with the OC emission limitation of 0.38 TPY may be demonstrated by the equations and methods specified in AP-42, Fifth Edition, Section 7.1(revised 1/95) multiplied by the overall control efficiency of 90%.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Boiler No. 2 (B003)

Activity Description: coal/fuel oil boiler - derated to 84.15 MMBtu 9/93

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
98 MMBtu/hr coal/oil-fired boiler with baghouse (derated to 71.2 MMBtu, based on March 1999 stack test)	OAC rule 3745-31-05(A)(3) (PTI 14-307)	See A.II.5. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-10(C) and 3745-18-37(FF).
	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-10(C)	0.22 lb PE/MMBtu of actual heat input See A.I.2.
	OAC rule 3745-18-37(FF)	1.6 lbs SO2/MMBtu of actual heat input
	40 CFR Part 63, Subpart DDDDD	See Attachment 2 of this permit.

2. Additional Terms and Conditions

2.a Pursuant to OAC rule 3745-17-10, the total heat input for B003 is derated from 98 MMBtu/hr to 71.2 MMBtu/hr. (The derated total heat input of 71.2 MMBtu/hr corresponds to a steam load of 53,460 pounds per hour.) Using the derated total heat input, the allowable particulate emissions rate for B003, from Figure I of OAC rule 3745-17-10, is 0.22 pound per MMBtu actual heat input.

II. Operational Restrictions

1. The permittee shall vent the emissions from B003 to a baghouse. The permittee shall maintain and operate the baghouse according to the manufacturer's specifications.

II. Operational Restrictions (continued)

2. The pressure drop across the baghouse shall be maintained within the range of 3 - 7.5 inches of water while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The quality of the coal and fuel oil burned in this emissions unit shall meet a sulfur content that is sufficient to comply with the allowable SO2 emission limitation specified in section A.1 above.

4. At no time shall the steam flow rate from B003 exceed 53,460 pounds per hour (as an average over any one-hour period).

5. The stack height of this boiler shall be at least 100 feet measured above ground level.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.

2. The permittee shall collect or require the coal supplier to collect a representative grab sample of each shipment of coal that is received for burning in this emissions unit. The permittee shall provide coal sampling and analysis in accordance with 40 CFR, Part 60, "Appendix A", Method 19. The permittee shall perform or require the supplier to perform the coal sampling in accordance with ASTM method D2234, Collection of a Gross Sample of Coal. Pursuant to OAC rule 3745-18-04(D)(8)(d)(iv), the permittee shall collect one representative coal sample per week for analysis. The coal sample shall consist of at least six sample increments weighing a minimum of 1.5 pounds each.

Each weekly composite sample of coal shall be analyzed for ash content (percent), sulfur content (percent), and heat content (Btu/pound of coal). The analytical methods for ash content, sulfur content, and heat content shall be: ASTM method D3174, Ash in the Analysis of Coal and Coke; ASTM method D3177, Total Sulfur in the Analysis Sample of Coal and Coke or ASTM method D4239, Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods; and ASTM method D2015, Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, ASTM method D3286, Gross Calorific Value of Coal and Coke by the Isothermal Bomb Calorimeter, or ASTM method D1989, Standard Test Method for Gross Calorific Value of Coal and Coke by Microprocessor Controlled Isoperibol Calorimeters, respectively. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

For the weekly composite sample of coal received for burning in this emissions unit, the permittee shall maintain records of the total quantity of coal received, the permittee's or coal supplier's analyses for ash content, sulfur content and heat content, and the calculated sulfur dioxide emission rate in pounds of sulfur dioxide per MMBtu of actual heat input. This calculation shall be performed according to the methods specified in OAC rule 3745-18-04(G).

3. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternative, equivalent methods may be used upon written approval by the Hamilton County Department of Environmental Services.

III. Monitoring and/or Record Keeping Requirements (continued)

For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated sulfur dioxide emission rate in lbs of sulfur dioxide per MMBtu of actual heat input. This calculation shall be performed according to methods specified in OAC rule 3745-18-04(G).

4. The permittee shall operate and maintain equipment to continuously monitor and record the steam flow rate, recorded in lbs of steam/hr, from B003. Copies of all steam flow rate charts shall be maintained for a period of 5 years, and shall be made available to the Hamilton County Department of Environmental Services upon verbal or written request.

5. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

2. The permittee shall submit, on a quarterly basis, copies of the permittee's or coal supplier's analyses (wet and/or dry) for the shipments of coal which are received for burning in this emissions unit. The permittee or coal supplier's analyses shall document the ash content (percent), sulfur content (percent), and heat content (Btu/pound) of each weekly composite sample of coal. The following information shall also be included in each report:

a. the total quantity of coal received in each shipment (tons) and the total quantity of coal associated with each weekly composite sample (tons);

b. the ash content (percent) of each weekly composite sample;

c. the sulfur content (percent) of each weekly composite sample;

d. the heat content (Btu/pound) of each weekly composite sample; and

e. the calculated SO2 emission rate (lbs/MMBtu actual heat input) for the coal in each weekly composite sample. The SO2 emission rate shall be calculated using the applicable methods specified in OAC rule 3745-18-04(G).

These quarterly reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall cover the coal shipments received during the previous calendar quarters.

IV. Reporting Requirements (continued)

3. The permittee shall submit, on a quarterly basis, copies of the permittee's or oil supplier's analyses for each shipment of oil which is received for burning in this emissions unit. The permittee's or oil supplier's analyses shall document the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil. The following information shall also be included with the copies of the permittee's or oil supplier's analyses:

a. the total quantity of oil received in each shipment (gallons);

b. the calculated SO2 emission rate (lbs/MMBtu actual heat input) of the oil received in each shipment. The SO2 emission rate shall be calculated using the applicable methods specified in OAC rule 3745-18-04(G).

These quarterly reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall cover the oil shipments received during the previous calendar quarters.

4. If for any reason the steam flow rate from B003 exceeds 53,460 pounds per hour, the following information shall be reported within 5 business days after the exceedance:

a. the date of the exceedance;

b. the time interval over which the exceedance occurred;

c. the value of the exceedance;

d. the cause(s) of the exceedance;

e. the corrective action which has been or will be taken to prevent similar exceedances in the future; and

f. a copy of the steam chart which shows the exceedance.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. To demonstrate compliance with the particulate emission limitation when burning coal, the permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within two (2) to three (3) years after issuance of the permit, and within 12 months prior to permit expiration.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for particulate emissions specified in A.I.1.

c. Methods 1-5 of 40 CFR Part 60, Appendix A, shall be employed to demonstrate compliance with the allowable particulate emission rate.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

V. Testing Requirements (continued)

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

2. Emission Limitation:
Particulate emissions shall not exceed 0.22 lb/MMBtu of actual heat input.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed with 40 CFR Part 60, Appendix A, Methods 1 - 5.

3. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

4. Emission Limitation:
Sulfur dioxide emissions shall not exceed 1.6 lbs/MMBtu of actual heat input.

Applicable Compliance Method when No.2 fuel oil:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.3.b of this permit.

Applicable Compliance Method when burning coal:
Compliance with the allowable sulfur dioxide emission limitation shall be demonstrated by the reporting requirements in Section A.IV.2.e of this permit.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed with 40 CFR Part 60, Appendix A, Methods 1 through 4, and 6.

5. Compliance with the average daily operating rate limitation specified in A.I.2 shall be determined by the record keeping requirements in Section A.III.4 of this permit.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fly Ash Handling (Z001)

Activity Description: fly ash from coal boiler baghouse to truck loading for offsite disposal

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
coal unloading	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	Dumping shall be accomplished at a slow rate and in a partially enclosed area to minimize or eliminate the visible emissions of fugitive dust.
fly ash handling system with baghouse	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation established in OAC rule 3745-17-07(A) is less stringent than that established pursuant to OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	No person shall cause or permit any fugitive dust source to be operated; or any materials to be handled, transported, or stored; without taking or installing reasonably available control measures(RACM) to prevent fugitive dust from becoming airborne. Currently, the venting of the fugitive emissions from the fly ash handling system to a baghouse satisfiesthe RACM requirements. There shall be no visible particulate emissions from the baghouse exhaust stack.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	2.37 lbs of particulate emissions/hr from the exhaust gases of the baghouse (based on Table 1 of OAC rule 3745-17-11).
fly ash unloading with spray bars	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	Spray bars (wet suppression) shall be utilized and water shall be applied at all times while fly ash dumping is occurring. The water application rate shall be sufficent to minimize or eliminate visible emissions of fugitive dust.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The particulate emissions from the fly ash handling system shall be vented to the fly ash baghouse.

2. The pressure drop across the fly ash baghouse shall be maintained within the range of 3 to 6 inches of water while the emissions unit is in operation.

3. The spray bars (wet suppression) shall be utilized at all times when fly ash unloading is occurring.

4. Should the control measures specified in A.II fail to be of sufficient effectiveness to demonstrate compliance with the visibile emission limitations specified in A.I.1, additional control measures shall be implemented.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on daily basis.

2. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the coal unloading and fly ash handling system serving this emissions unit. The presence or absence of any visible fugitive emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. whether the emissions are representative of normal operations;
b. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
c. the total duration of any visible emission incident; and
d. any corrective actions taken to minimize or eliminate the visible emissions.

4. The permittee shall maintained records indicating that the wet suppression system was in operation during fly ash unloading operations.

IV. Reporting Requirements

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the coal unloading and fly ash handling system serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the spray bars (wet suppression system) was not utilized when fly ash unloading was occurring.

4. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:

No visible particulate emissions from exhaust gases exiting the baghouse stack

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 22 and the procedures specified in OAC rule 3745-17-03(B)(3).

V. Testing Requirements (continued)

3. Compliance with the particulate emission limitation established in OAC rule 3745-17-11 may be determined by use of the emission factor of 2.2 lbs PE/ton of fly ash* handled multiplied by the worse case throughput of 1 ton/hr multiplied by the baghouse control efficiency of 99%.

2.2 lbs PE/ton X 1 ton/hr x (1-.99) = .022 lbs PE/Hr

*Emission factor taken from AP-42, Fifth Edition, Section 11, Table 11.17-4, Product Transfer and Conveying for Lime (similar to fly ash), updated 2/98.

If required, compliance with the PM emission limit shall be demonstrated by emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 5.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemical Man. (P001)

Activity Description: batch manufacture of misc. fine chemicals

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical manufacturing with packed bed scrubber system (See A.VI.1 below.)	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the charging process associated with this emissions unit shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a below.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).
	OAC rule 3745-21-07(G)	None, see A.I.2.b below.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

2. Additional Terms and Conditions (continued)

2.b The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. The emissions from T830 shall be vented to packed bed scrubber E830.

2. The pressure drop across the packed bed scrubber (E830) shall be maintained at a value within the range of 3.5 to 5 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the packed bed scrubber (E830) shall be continuously maintained at a value of not less than 34.8 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The pH of the scrubber liquor for the packed bed scrubber (E830) shall be maintained at a value greater than or equal to 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

2. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber;

b. the scrubber liquor flow rate; and

c. the pH of the scrubber liquor.

The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

2. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
0.030grPE/dscf from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

3. Emission Limitation:
no VEs from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the no visible emission limitation above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Spray Dryer Heater IA-D420 (Z107)

Activity Description: 18 to 20 MMBtu/hr spray dryer serving P011 PTI 14-086

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
20 MMBtu/hr natural gas spray dryer heater	OAC rule 3745-31-05(A)(3) (PTI 14-0086)	The PTI required compliance with applicable law at the time of issuance of the permit.
	OAC rule 3745-17-07(A)	This emissions unit is exempt from the visible particulate emission limitations in OAC rule 3745-17-07(A), pursuant to OAC rule 3745-17-07(A)(3)(h), because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
	OAC rule 3745-17-11	The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not aplly because the process weight, as defined in OAC rule 3745-17-10(B)(14), is equal to zero.
	OAC rule 3745-21-08(B)	None, see A.I.2.a below.
	OAC rule 3745-23-06(B)	None, see A.I.2.b below.

2. Additional Terms and Conditions

2.a The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in Permit to Install 14-0086.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.b The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in Permit to Install 14-0086.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Phthalimide Manufacturing (P002)

Activity Description: continuous phthalimide (P) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
phthalimide manufacturing, equipped with a venturi scrubber, baghouse, and dust bag (fabric filter placed over drum while grinding and load out is occurring) (See A.VI.1 below.)	40 CFR Part 63, Subpart F	The total resource effectiveness (TRE) values for this process are greater than 4; therefore, no control measures are required.
	40 CFR Part 63, Subpart G (40 CFR 63.113(e))	As an owner or operator of a Group 2 process vent with a TRE value greater than 4.0, the permittee shall maintain a TRE index value greater than 4.0 and shall comply with the provisions for calculation of a TRE index value in 40 CFR 63.115 and the reporting and record keeping provisions in 40 CFR 63.117(b) and 63.118(c) and (h). The permittee currently is not subject to monitoring or any other provisions of 40 CFR 63.114 through 63.118.
	40 CFR Part 63, Subpart H	See A.I.2.a, A.I.2.b, A.III.5, and A.III.7-A.III.14.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-21-07(G)	See A.I.2.d.
	OAC rule 3745-21-09(DD)	As provided for in OAC rule 3745-21-09(DD)(17)(a)(ii) this emission unit is exempt from the requirements of OAC rule 3745-21-09(DD)(2)-(6).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).
	OAC rule 3745-17-08(B)	See A.I.2.c below.

2. Additional Terms and Conditions

2.a The leak detection and repair program pertains to any type of valve or connector in organic hazardous air pollutant service within the Building 36 phthalic anhydride line. The equipment covered by this permit and subject to the SOCMI HON fugitive emissions at the time of permit issuance are listed below for general reference purposes. Changes to quantities do not necessarily require a modification to this permit:

Valves in heavy liquid service = 5
Nozzles and flow transmitters = 2
Connectors = 3

2.b Each piece of equipment that is in organic hazardous air pollutant service must be identified such that it can be distinguished readily from equipment that is not subject to the SOCMI HON regulations. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process unit boundaries by some form of weatherproof identification.

2.c The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber or baghouse capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent; and

iv. ventilation for the dust bag shall be securely attached to the collection drum. There shall be no visible PE from the dust bag.

v. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

2.d The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. The emissions from the flake pack out and pack out drums (non-ground product) shall be vented to the venturi scrubber (P-Scrubber).

II. Operational Restrictions (continued)

2. The pressure drop across the venturi scrubber (P-Scrubber) shall be continuously maintained at a value of not less than 6 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the venturi scrubber (P-Scrubber) shall be continuously maintained at a value of not less than 100 gallons per minute while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The permittee shall maintain a TRE index value greater than 4.0 and comply with the provisions for calculation of the TRE index in 40 CFR 63.115.

5. The pressure drop across the baghouse shall be continuously maintained between 5 and 7 inches of water at all times while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The emissions from the sublimer and flaker shall be vented to the baghouse.

7. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

III. Monitoring and/or Record Keeping Requirements

1. For the venturi scrubber (P-Scrubber), the permittee shall properly install*, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

* The scrubber liquor flow rate monitor shall be installed and operational within 3 months of the effective date of this permit.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis; and

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall properly install*, operate and maintain equipment to continuously monitor the static pressure drop across the baghouse while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall collect and record the pressure drop across the baghouse, in inches of water, on a once per shift basis.

* The baghouse pressure drop monitor shall be installed and operational within 3 months of the effective date of this permit.

3. The permittee shall maintain a daily log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10) and 40 CFR 63.161.

6. The permittee shall maintain up-to-date, readily accessible records of the following:

a. Any process changes that include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. (Process changes do not include process upsets; unintentional, temporary process changes; and changes that are within the range on which the original TRE calculation was based.)

b. Any recalculation of the TRE index value, flow, or organic hazardous air pollutants concentration for each process vent, as necessary to determine whether the vent is Group 1 or Group 2, whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent.

7. When a leak is detected within this emissions unit, the following requirements apply:

a. A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

b. The identification on a valve may be removed after it has been monitored as per the regulated method (as defined in 40 CFR Part 63, Subpart H) and no leak has been detected during the follow up monitoring.

c. The identification which has been placed on equipment determined to have a leak, except for a valve, may be removed after it is repaired.

III. Monitoring and/or Record Keeping Requirements (continued)

8. Valves and connectors in heavy liquid service and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired in accordance with the requirements of A.III.8.c and d, it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b).

If an instrument reading of 500 parts per million or greater for valves, connectors and instrumentation systems is measured, a leak is detected.

When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in A.III.9. of this permit. The first attempt at repair shall be no later than 5 calendar days after each leak is detected. For equipment identified in the first paragraph of this section that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check; or that the system will hold a test pressure.

First attempts at repair include, but are not limited to:

a. tightening of bolts;

b. replacement of bonnet bolts;

c. tightening of packing gland nuts; and

d. injection of lubricant into lubricated packing.

9. Delay of repair of equipment for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown. Repair of this equipment shall occur by the end of the next process unit shutdown.

Delay of repair of equipment for which leaks have been detected is allowed for equipment that is isolated from the process and that does not remain in organic HAP service.

Delay of repair for valves and connectors is also allowed if:

a. the owner or operator determines that emissions of purged material resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair, and

b. when repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 63.172.

Delay of repair beyond a process unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit shutdown will not be allowed unless the third process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

10. If there is more than one process unit subject to the provisions of 40 CFR Part 63, Subpart H, the permittee may comply with the record keeping requirements for these process units in one record keeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this permit shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

III. Monitoring and/or Record Keeping Requirements (continued)

11. The following information pertaining to all equipment in each process unit subject to the requirements of 40 CFR Part 63, Subpart H shall be recorded:

a. A list of identification numbers for equipment and instrumentation systems subject to the requirements of 40 CFR Part 63, Subpart H. Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a group, and the number of connectors subject is indicated. Individual components in an instrumentation system need not be identified.

b. Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this permit may be identified on a plant site plan, in log entries, or by other appropriate methods.

12. When each leak is detected as specified in A.III.8. of this permit, the following information shall be recorded and kept for five years:

a. The instrument and the equipment identification number and the operator name, initials, or identification number.

b. The date the leak was detected and the date of first attempt to repair the leak.

c. The date of successful repair of the leak.

d. The maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

e. "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak;

i. The permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan required by 40 CFR 63.6(e)(3) or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

ii. If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

f. The dates of process unit shutdowns that occur while the equipment is unrepaired.

g. Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records.

13. For visual inspections of equipment, the permittee shall document that the inspection was conducted and the date of the inspection. The permittee shall maintain records as specified in A.III.14. of this permit for leaking equipment identified in this inspection. These records shall be retained for 5 years.

14. The permittee shall retain information, data, and analyses used to determine or demonstrate that a piece of equipment is in heavy liquid service. A determination or demonstration shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

15. While product grinding and load out is occurring, the dust bag shall be examined to ensure the dust bag is securely attached to the collection drum and is free of visible emissions of fugitive dust while product load out is occurring. This inspection shall be conducted on a once per shift basis. The results of the inspection and any corrective action taken to eliminate any problems shall be collected and recorded in a log book.

III. Monitoring and/or Record Keeping Requirements (continued)

16. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber or baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. The static pressure drop across the scrubber.

b. The scrubber liquor flow rate.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the static pressure drop across the baghouse was not maintained at or above the required levels.

3. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 45 days after any photochemically reactive material was employed.

4. Prior to any changes in the production of phthalimide, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as Heavy Liquids.

5. The permittee shall submit semi-annual reports of start-ups, shutdowns and malfunctions as required by 40 CFR 63.10(d)(5).

6. A report containing the information required by A.III.7. of this permit shall be submitted semiannually by January 22 and July 22 of each calendar year.

7. For each process unit subject to the leak detection and monitoring requirements of this permit, the following report summary is required for each monitoring period during the 6-month period:

a. the number of valves for which leaks were detected, the percent leakers, and the total number of valves monitored;

b. the number of valves for which leaks were not repaired, identifying the number of those that are determined nonrepairable;

c. the number of connectors for which leaks were detected, the percent of connectors leaking, and the total number of connectors monitored;

d. the number of connectors for which leaks were not repaired, identifying the number of those that are determined nonrepairable; and

e. the facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible.

8. The permittee shall submit quarterly deviation (excursion) reports that identify all days for which product grinding and load out occurred and the inspection required in A.III.15 of the dust bag did not take place and/or visible emissions were documented.

IV. Reporting Requirements (continued)

9. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

10. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber or baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
No visible emissions from the stacks associated with the baghouse and scrubber.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

2. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

3. Emission Limitation:
0.030grPE/dscf from the scrubber or baghouse

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

4. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirement in A.III.5.

5. When monitoring for Hazardous Air Pollutant (HAP) or VOC leaks, the permittee shall comply with Method 21 of 40 CFR 60, Appendix A.

6. The permittee shall comply with the following procedures and requirements:

a. Except as provided for in Section A.V.8.b., the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAPs or VOCs, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted.

b. If no instrument is available at the plant site that will meet the performance criteria specified in Section A.V.8.a., the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in Section A.V.8.a.

c. The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, Appendix A.

V. Testing Requirements (continued)

7. Calibration gases shall be:

a. Zero air (less than 10 parts per million of hydrocarbon in air).

b. Mixtures of methane in air at the concentrations specified in this section. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in Section A.V.8.a. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air. A mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 500 ppm for all equipment, except as provided in Section A.V.8.c.3).

c. The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the permittee need not calibrate the scales that will not be used during that day's monitoring.

8. Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor.

9. Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless the permittee demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used.

The permittee may use good engineering judgment rather than the procedures in the above paragraph to determine that the percent organic HAP content does not exceed 5 percent by weight. When the permittee and the Administrator do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in the above paragraph shall be used to resolve the disagreement.

Conversely, the permittee may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent.

If the permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in the first paragraph of this section, or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service.

Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment.

10. Compliance with 40 CFR Part 63, Subpart G shall be demonstrated by the record keeping requirements of A.III.6.

11. Compliance with the requirements of 40 CFR Part 63, Subpart H shall be demonstrated by the record keeping requirements of A.I.2.a, A.I.2.b, A.III.5, and A.III.7-A.III.14.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

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B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: para-Cresidine Manufacturing (P005)

Activity Description: batch system to manufacture para-Cresidine

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
p-cresidine manufacturing with venturi and packed bed scrubbers	OAC rule 3745-21-07(G)	See A.I.2.a.

2. Additional Terms and Conditions

2.a The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2.b When manufacturing NMSO or MASO the emissions from T-700 shall be vented to venturi scrubber (P-656) and packed bed scrubber (C-655).
When manufacturing BBT the emissions from T-650, T-700, T660, or T710 and shall be vented to packed bed scrubber C-655.

II. Operational Restrictions

1. The pressure drops across the scrubbers shall be continuously maintained at the following values at all times while the emissions unit is in operation:

a. venturi scrubber (P-656): 2 inches of water; and

b. packed-bed scrubber (C-655): 2.5 inches of water.

The pressure drop across the scrubbers may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

2. The scrubber liquor flow rates shall be continouosly maintained at the following values at all times while the emissions unit is in operation:

a. venturi scrubber (P-656): 112 gallons per minute; and

b. packed-bed scrubber (C-655): 100 gallons per minute.

The scrubber liquor flow rates may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The pH of the scrubbing liquor for venturi scrubber P-656 shall be maintained between 9 -11.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit; and

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

2. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubbers and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubbers, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for venturi scrubber P-656; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

IV. Reporting Requirements

1. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

IV. Reporting Requirements (continued)

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubbers;

b. the scrubber liquor flow rate; and

c. the pH for the scrubber liquor in venturi scrubber P-656.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Compliance with OAC rule 3745-21-07(G) shall be demonstrated by the record keeping requirements in A.III.1.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals Manufacturing System No. 1 (P006)

Activity Description: Batch system to manufacture miscellaneous specialty chemicals: PTI 14-2916

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system #1 (batch manufacturing of specialty chemicals), equipped with a venturi scrubber	OAC rule 3745-31-05(A)(3) (PTI 14-02916)	For the production of NaCOPA, the following emission limitations shall not be exceeded. 0.024 lb organic compounds (OC)/hr* and 0.11 TPY 0.21 lb chlorine (Cl)/hr* and 0.92 TPY *The lbs/hr emission limitations established in PTI 14-02916 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure compliance with these limitations. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(B)(1), 3745-17-08(B) and 3745-21-07(G).
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the charging process shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a below.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	When employing products that are photochemically reactive materials as defined in OAC rule 3745-21-01(c)(5), the following emission limitations shall not be exceeded: 8 lbs OC/hr, 40 lbs/OC/day
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the permittee shall use hoods, fans, and equipment to adequately enclose, contain, capture, and vent the emissions of fugitive dust;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and

iii. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or liminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from T100, T120, T125, and T130 shall be vented to venturi scrubber P150 (acid gas scrubber).

2. The pressure drop across scrubber P150 (acid gas scrubber) shall be continuously maintained at a value of not less than 0.25 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate for scrubber P150 (acid gas scrubber) shall be continuously maintained at a value of not less than 15 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The pH of scrubber P150 (acid gas scrubber) shall be continuously maintained at a value greater than 4.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. For venturi scrubber P150 (acid gas scrubber), the permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate, and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day for scrubber P150 (acid gas scrubber):

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall collect and record the following information for each day that a photochemically reactive material is employed:

a. The company identification for each material used and product manufactured; and

b. The maximum hourly and daily emissions calculations for this process.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the scrubber parameters were not maintained at or above the required levels specified in A.II:

a. The static pressure drop across the scrubbers;

b. The scrubber liquor flow rates; and

c. The pH of the scrubber liquor.

The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

2. The permittee shall submit deviation (excursion) reports which include the following information:

a. For the days during which a photochemically reactive material was employed, an identification of each day during which the average hourly organic compound emissions from the materials and products exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day .

b. For the days during which a photochemically reactive material was employed or produced, an identification of each day during which the organic compound emissions from the materials and products exceeded 40 pounds per day, and the actual organic compound emissions for each such day.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
8 lbs OC/hr, 40 lbs/OC/day on days when photochemically reactive materials are employed.

Applicable Compliance Method:
Compliance shall be determined through the emission calculations in A.III.2.

4. Emission Limitation:
Visible particulate emissions from any stack shall not exceed 20% opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

5. Emission Limitations:
For the production of NaCOPA:

0.024 lb organic compounds (OC)/hr and 0.11 TPY

0.21 lb chlorine (Cl)/hr and 0.92 TPY

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations above by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-2916.

VI. Miscellaneous Requirements

1. None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
Fine chemicals system #1 with venturi scrubber - batch manufacturing of specialty chemicals	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Benzotriazole Manufacturing (P008)

Activity Description: batch reaction/continuous purification benzotriazole (BT) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
benzotriazole manufacturing, equipped with a venturi scrubber and thermal oxidizer (See A.VI.1 below.)	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-21-07(G)	None, see A.I.2.a below.
	OAC rule 3745-21-09(DD)	See A.II.6.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).

2. Additional Terms and Conditions

2.a The permittee shall not emply any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2. Additional Terms and Conditions (continued)

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a scrubber capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

II. Operational Restrictions

1. The pressure drop across venturi scrubber P656 shall be continuously maintained at a value of not less than 2 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

2. The scrubber liquor flow rate for venturi scrubber P656 shall be continuously maintained at a value of not less than 112 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The pH of the scrubber liquor for venturi scrubber P656 shall be maintained within the range of 9 to 11.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation and Control Option #1 is used (see A.II.5 for the requirements of control option #1 and #2), shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

5. The permittee shall operate this emissions unit using Control Option #1, as specified below, provided that the thermal oxidizer is operating pursuant to the terms and conditions for emissions units P014 and P022. If the thermal oxidizer is not operating, then Control Option #2 shall be used. The Hamilton County Department of Environmental Services shall be notified immediately of the intention to switch from Control Option #1 to Control Option #2, except in the case of a start-up condition, during which the thermal oxidizer is undergoing the required heat-up procedure.

II. Operational Restrictions (continued)

Control Option #1 (with Thermal Oxidizer):

a. Emissions from reaction vessel T-760 and barometric water vessel T-665 shall be vented to the atmosphere.

b. Emissions from reaction vessels T-660 and T-650 shall be vented through the venturi scrubber.

c. Emissions from reaction vessels T-901 or T-102 and the residue packout shall be vented to the thermal oxidizer.

d. Emissions from the vacuum system, vacuum jets, powder packout and flake packout shall be vented to the atmosphere.

Control Option #2 (without Thermal Oxidizer):

a. Emissions from reaction vessel T-760 and barometric water vessel T-665 shall be vented to the atmosphere.

b. Emissions from reaction vessels T-660 and T-650 shall be vented through the scrubber.

c. Emissions from reaction vessels T-901 or T-102 and the residue packout shall be vented to the atmosphere.

d. Emissions from the vacuum system, vacuum jets, powder packout and flake packout shall be vented to the atmosphere.

6. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months of issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

3. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation and Control Option #1 is used. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.

b. A log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall collect and record the following information each month:

a. the company identification of each liquid organic material employed in this emissions unit.

b. documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained for venturi scrubber P656 at or above the required levels:

a. the static pressure drop across the scrubber;

b. the scrubber liquor flow rate; and

c. the pH of the scrubber liquor.

2. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

IV. Reporting Requirements (continued)

4. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

5. Prior to any changes in the production of benzotriazole, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as Heavy Liquids.

6. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:
0.030grPE/dscf from the scrubber

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

3. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in A.III.4.

4. This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

2. The control requirements under Control Option 1 & 2 were required for resolution to a verfied complaint (case #1000) where the company was found to be operating in violation of OAC rule 3745-15-07.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Saccharin Manufacturing (P010)

Activity Description: continuous saccharin production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
saccharin manufacturing process, equipped with venturi scrubbers, packed bed scrubbers, spray chambers, and a baghouse (See A.VI.1. below.)	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust from reactor charging and product load out shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.a.
	OAC rule 3745-18-06(E)(2)	81.7 lbs sulfur dioxide (SO2)/hr
	OAC rule 3745-21-07(G)	None, see A.I.2.b.below.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.
	OAC rule 3745-17-07(A)	The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-17-08(B)(3).

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to a baghouse capable of achieving an outlet emission rate of not greater than .030 grain of particulate emissions per dry standard cubic foot of exhaust gases or there are no visible particulate emissions from the exhaust stack(s), whichever is less stringent: and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

2.b The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

II. Operational Restrictions

1. D801 shall be vented to preformed-spray wet scrubber F801.

2. T300, T320, T330, T151, T154, T152, T156, T153, T951, T952, T160, T953, and T956 shall be vented to packed bed scrubber X17FE and preformed-spray wet scrubber X17FE in series.

3. T501, T650, T735, T425, T407, T401, and X430 shall be vented to packed bed scrubber X17-seal pot and venturi scrubber X17-coupler in series.

4. The emissions from the product packout line shall be vented to baghouse F880.

5. The pressure drop across each scrubber and baghouse shall be continuously maintained within the following ranges at all times while the emissions unit is in operation:

a. packed bed scrubber X17FE: 1 to 3 inches of water;

b. venturi scrubber X17 coupler: 1 to 2 inches of water; and

c. baghouse F-880: 3 to 6 inches of water.

The pressure drop across the scrubbers or baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

6. The liquor flow rate to each scrubber shall be continuously maintained above the following minimum flow rates at all times while the emissions unit is in operation:

a. preformed-spay wet scrubber F801: not less than 10.2 gallons/minute;

b. packed bed scrubber X17FE: not less than 17 gallons/minute;

c. preformed-spray scrubber X17FE: not less than 4.3 gallons/minute;

d. packed bed scrubber X17 seal pot: not less than 5 gallons/minute; and

e. venturi scrubber X17 coupler : not less than 2.5 gallons/minute.

The scrubber liquor flow rates may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The pH of each scrubber shall be continuously maintained within the following ranges at all times while the emissions unit is in operation:

a. packed bed scrubber X17FE: 7-8;

b. packed bed scrubber X17 seal pot: 7-12; and

c. venturi scrubber X17 coupler : 8-12.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across each scrubber and baghouse, the scrubber liquor flow rate of each scrubber, and the pH of each scrubber liquor while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturers' recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across each of the scrubbers and the baghouse, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rates, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

2. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber and baghouse parameters were not maintained at or above the required levels:

a. the static pressure drop across each scrubber and the baghouse;

b. the liquor flow rate for each scrubber; and

c. the pH of the scrubber liquor for each scrubber.

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying material (i.e., photochemically reactive material). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
No visible emissions from the exhaust stack of the baghouse.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the no visible emission limitations above in accordance with Method 22 of 40 CFR, Part 60, Appendix A.

V. Testing Requirements (continued)

2. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors and product load out shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

3. Emission Limitation:
0.030grPE/dscf from the baghouse

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the PE limitation above in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

4. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within six-months of permit issuance.

b. The emission testing shall be conducted to demonstrate compliance with the sulfur dioxide emission limitation of 81.70 lbs/hr

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): 40 CFR, Part 60, Appendix A, Method 6. Alternative U.S. EPA approved test methods may be used with prior approval from the Hamilton County Department of Environmental Services.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Hamilton County Department of Environmental Services.

5. Compliance with the PE limitation specified in A.I.1 may be demonstrated by the detailed emission calculations submitted as a supplement to Cincinnati Specialties Title V permit to operate application dated June 14, 1999 .

VI. Miscellaneous Requirements

1. This emissions unit was installed prior to February 15, 1972 and was an uncontrolled fugitve dust source located in an Appendix A area of OAC rule 3745-17-08. On or after February 15, 1972 a capture system and control equipment were installed. The capture system partially collects the emissions previously emitted. Therefore, this emissions unit must employ reasonably available control measures (RACM) for the uncontrolled emissions and the control equipment discharge must comply with the OAC rule 3745-17-08(B)(3) PE limitation of 0.030 gr/dscf or have no VEs, whichever is less stringent.

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: IA process (P011)

Activity Description: continuous isatoic anhydride (IA) production unit: PTI 14-086

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
isatoic anhydride (IA) manufacturing, equipped with a venturi scrubber, baghouse and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-0086)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-08(B), 3745-17-11(B) and 3745- 21-09(DD).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the scrubber and incinerator stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-17-11(B)	18.2 lbs of PE/hr from the stacks associated with this emissions unit (based on Table 1 of OAC rule 3745-17-11)* *The potential to emit for this emissions unit is less than the allowable emission rate established by OAC rule 3745-17-11(B). Therefore, no monitoring, record keeping or reporting is necessary demonstrate compliance with this limit.
	OAC rule 3745-21-07(G)	None, see A.I.2.a.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-09(DD)	As provided for in OAC rule 3745-21-09(DD)(17)(a)(ii), this emission unit is exempt from the requirements of OAC rule 3745-21-09(DD)(2)-(6).

2. Additional Terms and Conditions

2.a The permittee shall not emply any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust shall be vented to a baghouse; and

iv. when loading solid materials into the reactors, visible emissions of fugitive dust shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactors.

II. Operational Restrictions

1. The emissions from the IA reactor shall be vented to the "P" Off-Gas thermal oxidizer. The emissions from the IA Quencher shall be vented to the Quencher venturi scrubber. The emissions from the the blender and packaging operations shall be vented to a baghouse.

2. The pressure drop across the venturi scrubber associated with the IA Quencher shall be continuously maintained at a value greater than 1 inch of water at all times the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to the venturi scrubber associated with the IA Quencher shall be continuously maintained at a value of not less than 15.5 gallons per minute at all times while the emissions unit is in operation

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

II. Operational Restrictions (continued)

5. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

6. The pressure drop across the baghouse associated with the IA blender and packaging operations shall be maintained within the range that shall be determined from manufacturer's specifications and recommendations while the emissions unit is in operation.

The pressure drop across the baghouse may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the venturi scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.; and

b. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

3. The permittee shall properly install (within 3 months after permit issuance), operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

III. Monitoring and/or Record Keeping Requirements (continued)

4. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

6. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber; and

b. the scrubber liquor flow rate.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal ozidizer did not comply with the temperature limitation specified above.

3. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

4. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying materials (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 30 days after any photochemically reactive material was employed.

5. Prior to any changes in the production of isatoic anhydride, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as heavy liquids.

6. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber and baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible particulate emissions from the scrubber stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in A.III.5.

3. Emission Limitation:
18.2 lbs of PE/hr from the stacks

Applicable Compliance Method:
If required, compliance with the PE limitation shall be demonstrated by stack testing conducted in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Saccharin Spray Dryer (P013)

Activity Description: continuous spray dryer for sodium, calcium and insoluble saccharin

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
saccharin spray dryer with cyclonic scrubber and dust bag (fabric filter placed over drum while load out is occurring)	OAC rule 3745-31-05(A)(3) (PTI 14-077)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07(A), 3745-17-07(B), 3745-17-08(B) and 38745-17-11(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust from the product pack-out for this emissions unit shall not exceed 20 percent opacity, as a three-minute average.
	OAC rule 3745-17-08(B)	See A.I.2.a.
	OAC rule 3745-17-11(B)	2.2 lbs of PE/hr from the scrubber stack (based on Table 1 of OAC rule 3745-17-11)

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design; and

iii. all fugitive dust captured shall be vented to a fabric filter.

II. Operational Restrictions

1. The PE from product recovery cyclone S-1001 shall be vented to cyclonic scrubber X17-X-1005.

2. The pressure drop across cyclonic scrubber X17-X-1005 shall be continuously maintained at a value of not less than 8 inches of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The scrubber liquor flow rate to cyclonic scrubber X17-X-1005 shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The dust bag shall be securely attached to the collection drum. There shall be no visible PE from the dust bag.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber water flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The above mentioned monitoring devices shall be installed and operational within 3 months of the effective date of the final Title V permit to operate.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

a. the static pressure drop across the scrubber; and

b. the scrubber liquor flow rate.

IV. Reporting Requirements (continued)

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from the scrubber stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitation:
2.2 lbs of PE/hr from the scrubber stack

Applicable Compliance Method:
If required, compliance with the PE limitation shall be demonstrated by stack testing conducted in accordance with Methods 1 - 5 of 40 CFR, Part 60, Appendix A.

3. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Anthranilic Acid Manufacturing (P014)

Activity Description: batch reaction/continuous drying anthranilic acid (AA) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
anthranilic acid (AA) manufacturing system reactor equipped with a thermal oxidizer and scrubber.	OAC rule 3745-31-05(A)(3) (PTI 14-05234)	organic compounds (OC) emissions from the AA reactor: stack OC: 37.41 lbs/day, 12.5 lbs/batch fugitive OC: 2.34 lbs/day, 0.8 lb/batch total OC: 7.25 tons per year (TPY) particulate emissions (PE)* from the AA reactor: fugitive emissions: 1.26 lbs/day, 0.4 lb/batch total emissions: 0.23 TPY PM from the NaPMC reaction: fugitive emissions: 29.25 lb/day 9.8 lbs/batch total emissions: 5.34 TPY See terms A.II.5 and A.II.8. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(B)(1), 3745-17-08(B), 3745-21-09(DD), and 3745-21-09(YY). * Assume all PE is PM10.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	See term A.II.7.
	OAC rule 3745-21-09(DD)	See terms A.II.6 and A.III.5.
	OAC rule 3745-21-09(YY)	Any VOC emissions from the reactor process vent streams from this emissions unit shall be vented to an enclosed combustion device that is designed and operated to reduce the VOC emissions by at least 95 percent, by weight.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
anthranilic acid (AA) manufacturing system (spray dryer equipped with a wet scrubber)	OAC rule 3745-31-05(A)(3) (PTI 14-05234)	OC emissions from the AA spray dryer: stack OC: 9.84 lbs/day fugitive OC: 30.48 lbs/day total OC: 7.36 TPY PE* from the AA spray dryer: stack emissions: 0.72 lb/hour, 17.28 lbs/day fugitive emissions: 20.5 lb/day total emissions: 6.89 TPY PM The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), 3745-17-07(B)(1), 3745-17-08(B)(3), and 3745-21-09(DD). * Assume all PE is PM10.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-09(DD)	See terms A.II.6 and A.III.5.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the production limitation, the use of a thermal oxidizer to control the reactor emissions, and the use of a scrubber to control spray drying emissions.

2. Additional Terms and Conditions (continued)

2.b The lb(s)/batch allowables in term A.I.1 above are based upon maximum values listed in the air permit to install application for this permit. If these maximum values change, then the permittee shall implement term and condition A.IV.6.

2.c When loading solid materials into the reactors, particulate emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The permittee shall operate the scrubber (AA-05) and thermal oxidizer (AA-01) according to the manufacturers' specifications.

2. The pressure drop across scrubber AA-05 shall be continuously maintained at a value of greater than 5 inches of water, or the value established during the most recent performance test which demonstrated compliance, at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

3. The liquor flow rate of scrubber AA-05 shall continuously maintained at a value of not less than 39 gallons per minute, or the value established during the most recent performance test which demonstrated compliance, at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

5. The maximum number of batches produced in this emissions unit shall not exceed 3 per day.

6. Prior to employing organic materials which are not exempt from the requirements of OAC rule 3745-21-09(DD), Leaks from Process Units That Produce Organic Chemicals, the permittee shall establish written procedures which will demonstrate compliance with all provisions of OAC rule 3745-21-09(DD) and shall notify the Hamilton County Department of Environmental Services so that these permit terms may be modified to incorporate the requirements of OAC rule 3745-21-09(DD).

7. The use of photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5), is prohibited.

8. Emissions from the AA product recovery cyclone, the product blender, and product packout shall be vented to the packed bed AA scrubber.

9. The emissions from T-300 shall be vented to the thermal oxidizer.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across scrubber AA-05, in inches of water, on a once per shift basis; and

b. the liquor flow rate of scrubber AA-05, in gallons per minute, on a once per shift basis.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within thermal oxidizer AA-01 when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

All 3-hour blocks of time during which the average combustion temperature within thermal oxidizer AA-01, when the emissions unit was in operation, was less than the temperature specified in term A.II.4.

3. The permittee shall collect and record the following information for each day:

A log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

4. The permittee shall maintain daily records of the number of batches produced and the type of material produced.

5. The permittee shall maintain records that contain a listing of the feed and raw materials and products of the process units along with an analysis demonstrating that these materials and products are in heavy liquid service as defined by OAC rule 3745-21-01(M)(10).

6. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is a photochemically reactive material, as identified in OAC rule 3745-21-01(C)(5).

7. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and baghouse and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels as specified in term A.II.:

a. The static pressure drop across scrubber AA-05.

b. The liquor flow rate of scrubber AA-05.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within thermal oxidizer AA-01 did not comply with the temperature limitation specified above in term A.II.4.

3. The permittee shall submit quarterly deviation (excursion) reports that identify the each day during which the number of batches of material produced exceeded three and the actual number of batches produced for each such day.

4. Prior to any changes in the production of anthranilic acid, the permittee shall notify the Hamilton County Department of Environmental Services as to whether the changes will result in the feed, raw materials or products of these process units no longer being classified as heavy liquids.

5. Prior to any change in the materials listed in this application, the permittee shall provide documentation to this agency to demonstrate that they will still be able to comply with the emission limitations outlined in this permit. If the emission limitations will be exceeded by the change, the permittee shall submit a new permit to install application.

6. The permittee shall notify the Hamilton County Department of Environmental Services in writing identifying each day during which any photochemically reactive material (as defined in OAC rule 3745-21-01(C)(5)) was employed in this emissions unit. This report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of organic compound emissions emitted each such day. This report shall be submitted to the Hamilton County Department of Environmental Services within 45 days after the exceedance occurs.

7. The quarterly deviation reports shall be submitted in accordance with the reporting requirements as specified in Part 1 - General Terms and Conditions A.1.c.

8. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. Emission Limitation:
Fugitive emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

3. Compliance with OAC rule 3745-21-09(DD) shall be demonstrated by the record keeping requirements in term A.III.5.

4. Emission Limitation:
All VOC emissions from the reactor process vent streams reduced by at least 95 percent, by weight.

Applicable Compliance Method:
Compliance with the minimum VOC reduction requirement shall be demonstrated by the stack testing required in section A.V.6 of these terms and conditions.

5. Compliance with the PE/PM10 and OC emission limitations outlined in this permit shall be demonstrated by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in the PTI application 14-05234 submitted 10/23/01. The lbs/batch numbers are based on the calculations submitted in the above noted PTI application.

6. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after issuance of the permit, the third year of the permit, and within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulate matter from the AA scrubber and the organic compound destruction efficiency of the thermal oxidizer. Testing of the thermal oxidizer shall include a test of the control efficiency when only emissions unit P014 is vented to the oxidizer and an additional test when all emissions units that are vented to the thermal oxidizer are operating (P008, P015, P022, P901 and P902).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

For Particulate Emissions from the AA Scruber, Methods 1-5 of 40 CFR Part 60, Appendix A

The 95% OC control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or other approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

V. Testing Requirements (continued)

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methyl Anthranilate Manufacturing (P022)

Activity Description: continuous Methyl Anthranilate (MA) production unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methyl anthranilate manufacturing process, equipped with a cartridge filter and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-2103)	4.04 lbs organic compounds(OC)/hr* 17.7 TPY OC* 0.42 lb particulate emissions (PE)/hr* 1.84 TPY PE* *The lbs/hr and TPY emission limitations established in PTI 14-2103 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure compliance. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and OAC rule 3745-21-09(YY).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-09(YY)	See A.I.2.
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a All VOC emissions from the reactor process vent streams from this emissions unit shall be vented to an enclosed combustion device that is designed and operated to reduce the VOC emissions by at least 95 percent, by weight.

II. Operational Restrictions

1. The emissions from T-201 shall be vented to the cartridge filter (fabric filter) at all times.

2. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The temperature monitor shall correspond to and record the time of day. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

b. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

2. The permittee shall perform quarterly inspections of the cartridge filter controlling this emissions unit. At a minimum, these quarterly inspections shall include the following:

a. a visual leak check of the duct work leading to the cartridge filter to ensure no leaks are occuring.

b. a visual inspection of the cartridge filter to look for holes, puntures, perforations, or any other indication of problems leading to the filter not functioning properly.

c. a check of any visible emissions exiting the cartridge filter.

The permittee shall collect and record the results of this inspection in a log book. If any problems are noted during the quarterly inspection, the measures taken to correct the problem should be noted.

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the fabric filter serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified in A.II.2.

IV. Reporting Requirements (continued)

2. The permittee shall submit quarterly deviation (excursion) reports that identify all quarters the inspection of the cartridge filter required in A.III.2 did not take place.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the cartridge filter serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitation:
All VOC emissions from the reactor process vent streams reduced by at least 95 percent, by weight.

Applicable compliance method:
This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

3. Emission Limitations:
4.04 lbs of OC)/hr and 17.7 TPY of OC
0.42 lb of PE/hr and 1.84 TPY of PE

Applicable Compliance Methods:
Compliance with the PE/PM10 and OC emission limitations outlined in this permit shall be demonstrated by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in the PTI application 14-02103.

If required, compliance with the lbs/hr emission limitations shall be demonstrated by stack testing conducted in accordance with the following methods:

For PE, Methods 1 - 5 of 40 CFR, Part 60, Appendix A
For OC, Methods 1 - 4 and 25 or 25A of 40 CFR, Part 60, Appendix A

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methyl anthranilate manufacturing process with cartridge filter and thermal oxidizer	Air Toxics Policy	See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 3.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 10.58
MAGLC (ug/m3): 3743

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Recovery Unit (P023)

Activity Description: continuous methanol recovery unit

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methanol recovery unit	OAC rule 3745-31-05(A)(3) (PTI 14-3255)	.65 lb of organic compounds(OC)/hr* 2.85 TPY OC* *The lb/hr and TPY emission limitations established in PTI 14-3255 were based on the emissions unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance.
	OAC rule 3745-21-07(G)	None (See A.II.1.)
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The permittee shall not employ any liquid organic material in this emissions unit that is a photochemically reactive material. "Photochemically reactive material" is defined in OAC rule 3745-21-01(C)(5).

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each month:

a. The company identification of each liquid organic material employed in this emissions unit.

b. Documentation on whether or not each liquid organic material employed is a photochemically reactive material.

IV. Reporting Requirements

1. The permittee shall notify the Director (the Hamilton County Department of Environmental Services) of any monthly record showing the use of any noncomplying materials (i.e., photochemically reactive materials). This notification shall be in writing and shall be submitted within 45 days after any photochemically reactive material was employed.

V. Testing Requirements

1. Emission Limitations:
0.65 lb of OC/hr and 2.85 TPY of OC

Applicable Compliance Method:
If required, compliance with the lbs/hr emission limitation shall be demonstrated by stack testing conducted in accordance with Methods Methods 1 - 4 and 25 or 25A of 40 CFR, Part 60, Appendix A.

As long as compliance with the hourly limitation is maintained, compliance with the annual limitation shall be ensured (the annual limitation was determined by multiplying the hourly emission rate by 8760hrs, and then dividing by 2000 lbs/ton).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
methanol recovery unit	Air Toxics Policy	See B.III.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 3.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 10.58
MAGLC (ug/m3): 3743

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals System 300/400 (P025)

Activity Description: Initially operated under P001. PTI 14-3752:10/12/95.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical systems 300 and 400, equipped with two venturi scrubbers and one packed bed scrubber (scrubbers are not in series)	OAC rule 3745-31-05(A)(3) (PTI 14-3752)	12.4 lbs/day ammonia, 2.26 TPY ammonia 2.88 lbs/day organic compounds (OC), 0.52 TPY OC 1.06 lbs/day acid vapor, 0.20 TPY acid vapor 7.01 lbs/day SO2, 1.28 TPY SO2 0.22 lb/day particulate emissions(PE)/PM10, 0.04 TPY PE/PM10 The requirements of this rule also includes compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.a.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures (RACM) at all times for the control of the fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions.

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers; and

iv. when loading solid materials into the reactors, fugitive PE shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The number of batch starts per day shall not exceed the following:

a. system 300 Reactors: 3 ; and
b. system 400 Reactors: 4.

2. The emissions from reactors T330, T350, and T370 shall be vented to packed bed scrubber E830.

3. The emissions from reactors T400, T420, and T451 shall be vented to venturi scrubber P445.

4. When XBINX is being produced, the emissions from reactors T350 and T370 shall be vented to packed bed scrubber E830 or venturi scrubber P356.

II. Operational Restrictions (continued)

5. The pressure drop across scrubbers E830, P445, and P356 shall be continuously maintained at a value of not less than the following at all times while the emissions unit is in operation:

a. E830: 3.5 inches of water;

b. P445: 1 inch of water; and

c. P356: 2 inches of water.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The scrubber liquor flow rate for scrubbers E830, P445, and P356 shall be continuously maintained at a value of not less than the following at all times while the emissions unit is in operation:

a. E830: 34.8 gallons of water per minute;

b. P445: to be determined*; and

c. P356: to be determined*.

*The minimum scrubber liquor flow rates shall based on the manufacturer's specification and recommendations.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The pH of the scrubber liquor for scrubbers E830, P445, and P356 shall be continuously maintained at the following levels at all times while the emissions unit is in operation:

a. E830: 6-10;

b. P445: not less than 6; and

c. P356: not less than 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record the following information each day:

a. the number of batch starts in system 300 reactors;

b. the number of batch starts in system 400 reactors: and

c. the products produced in each of the system 300 and 400 reactors.

III. Monitoring and/or Record Keeping Requirements (continued)

2. Within 90 days of the final issuance of this permit, the permittee shall properly install, operate and maintain equipment to continuously monitor the static pressure drop across the scrubber, the scrubber liquor flow rate and the pH of the scrubber liquor for scrubbers E830, P445, and P356 while the emissions unit is in operation. For scrubbers E830, P445, and P356, the monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across each scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rate for each scrubber, in gallons per minute, on a once per shift basis;

c. the pH of the scrubber liquor for each scrubber, on a once per shift basis; and

d. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this associated emissions unit was in operation.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all days during which the batch limitations outlined in A.II.1. were exceeded.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels:

a. the static pressure drop across each of the scrubbers;

b. the liquor flow rates for each of the scrubbers; and

c. the pH of the scrubber liquor for each of any of the scrubbers.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitation above through visible emissions observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. Emission Limitations:
12.4 lbs/day Ammonia, 2.26 TPY Ammonia
2.88 lbs/day organic compounds (OC), 0.52 TPY OC
1.06 lbs/day Acid vapor, 0.20 TPY Acid vapor
7.01 lbs/day SO2, 1.28 TPY SO2
0.22 lb/day particulate emissions(PE)/PM10, 0.04 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations above by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-3752 submitted 12/16/94 and revised 8/11/95.

3. Emission Limitation:
Visible emissions of fugitve dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemical systems 300 and 400 w/ two venturi scrubbers and one packed bed scrubber (scrubbers are not in series)	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit, P025 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Ammonia
TLV (ug/m3): 17,000
Maximum Hourly Emission Rate (lbs/hr): 2.77
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 247.6
MAGLC (ug/m3): 404.76

Pollutant: SO2
TLV (ug/m3): 5200
Maximum Hourly Emission Rate (lbs/hr): .52
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 35.88
MAGLC (ug/m3): 124

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fine Chemicals System II (P027)

Activity Description: Specialty Chemical manufacturing system; PTI No. 14-4460

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system II, equipped with a packed bed scrubber	OAC rule 3745-31-05(A)(3) (PTI 14-4460)	0.38 lb volatile organic compound (VOC)/hr from the exhaust gases from packed bed scrubber X289* 1.7 lbs VOC/hr from vent P200* 8.8 lbs VOC/day from fugitive emissions* 1.64 TPY total annual VOC (stack emissions from P200 and X289 + fugitive)* 9.11 lbs particulate emissions (PE)/PM10/day* 1.66 TPY PE/PM10* *The lbs/hr and TPY emission limitations established in PTI 14-4460 were based on the emission unit's potentials to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance. See A.I.2.a and A.I.2.b. The requirements of this rule also includes compliance with the requirements of OAC rules 3745-17-07(B)(1), 3745-17-07(A) and 3745-17-08(B).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.c.
	OAC rule 3745-21-09(YY)	See A.I.2.c.
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	40 CFR Part 63, Subpart FFFF	See Attachment 1 of this permit.

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain the packed bed scrubber in a manner that will reduce the VOC emissions by a minimum of 98 percent by weight.

2.b The permittee shall use a nitrogen-purged centrifuge.

2.c The permittee shall employ reasonably available control measures (RACM) at all times for the control of the fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control fugitive dust emissions.

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubber; and

iv. when loading solid materials into the reactors, fugitive PE shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from reactors T200, T220, T230, T280, and X-200 shall be vented to packed bed scrubber X289.

2. The pressure drop across packed bed scrubber X289 shall be continuously maintained at a value of not less than .13 inches of water during all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

3. The scrubber liquor flow rate for scrubber X289 shall be continuously maintained at a value of not less than 3.3 gallons of water per minute during all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. For packed bed scrubber X289, the permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across the scrubber and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the pressure drop across the scrubber, in inches of water, on a once per shift basis;

b. the scrubber liquor flow rates for scrubber, in gallons per minute, on a once per shift basis; and

c. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when this emissions unit was in operation.

2. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubber and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at the required levels:

a. the static pressure drop across the scrubber; and

b. the liquor flow rate for the scrubber.

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

3. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubber serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from the scrubber stack shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 3 months after issuance of the permit.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for volatile organic compounds from scrubber X289 and P200 listed in A.I.1 of this permit. Testing of scrubber X289 shall also include testing of the inlet to determine the control efficiency for VOC from the scrubber.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or the approved alternative test protocol (e.g., "the mass balance protocol approved on 10/25/95"). The test methods and procedures selected to determine the mass emission rate shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

V. Testing Requirements (continued)

3. Emission Limitations:
0.38 lb of VOC/hr from the exhaust gases from packed bed scrubber X289 and 1.7 lbs VOC/hr from vent P200

8.8 lbs of VOC/day from fugitive emissions and 1.64 TPY total annual VOC (stack emissions form P200 and X289 + fugitive)

9.11 lbs of PE/PM10/day and 1.66 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations by the stack test results required in A.V.2. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4460 submitted 9/29/97 and revised 2/25/98.

4. Emission Limitation:
Visible emissions of fugitive dust from the charging of the reactors shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
fine chemicals system II with packed bed scrubber	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit, P027 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Methanol from scrubber X289
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 0.38
Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 177.2
MAGLC (ug/m3): 3742.86

Pollutant: Methanol from P200
TLV (ug/m3): 262,000
Maximum Hourly Emission Rate (lbs/hr): 1.7
Predicted 1-Hour Maximum Ground-Level
Concentration (ug/m3): 269.2
MAGLC (ug/m3): 3742.86

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

III. Monitoring and/or Record Keeping Requirements (continued)

a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled.

b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled.

c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.).

b. Documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy".

c. Where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Tolyltriazole Manufacturing (P901)

Activity Description: continuous tolyltriazole (TT) production unit, previously P003

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
tolyltriazole manufacturing, equipped with a NOx venturi scrubber and NOx packed column scrubber in series, a product packout venturi scrubber, carbon adsorber, and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-4456)	See A.I.2. and A.II. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B)(3).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.d.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The following emission limitations for this emissions unit shall not be exceeded when the primary control plan is used:

i. For the thermal oxidizer stack (Vent Y)- continuous process:

(a) 0.085 pound per hour organic compounds(OC), 0.37 TPY OC;
(b) 8.71 pounds per hour nitrogen oxides(NOx), 38.15 TPY NOx; and
(c) 0.001 pound per hour acid vapor, 0.0044 TPY acid vapor.

ii. From all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC from other stacks combined - continuous process.

iii. For the manufacture of batch products:

(a) 1.20 pound per batch OC, 0.25 TPY OC; and
(b) 0.39 pound per batch NOx, 0.37 TPY NOx.

iv. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Primary Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Primary Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2. Additional Terms and Conditions (continued)

2.b The following emission limitations for this emissions unit shall not be exceeded when the primary back-up control plan is used:

i. For the thermal oxidizer stack (Vent Y)- continuous process:

(a) 0.079 pound per hour OC, 0.35 TPY OC; and
(b) 1.24 pounds per hour NOx, 5.43 TPY NOx.

ii. For the NOx Scrubber Outlet (venturi and packed column in series - either Vent A or X) - continuous process:

(a) 0.12 pound per hour OC, 0.53 TPY OC;
(b) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(c) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

iii. From all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC from other stacks combined - continuous process.

iv. For the manufacture of batch products:

(a) 1.20 pounds per batch OC, 0.25 TPY OC; and
(b) 0.39 pound per batch NOx, 0.37 TPY NOx.

v. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Primary Back-Up Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Primary Back-Up Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2. Additional Terms and Conditions (continued)

2.c The following emission limitations for this emissions unit shall not be exceeded when the secondary back-up control plan is used:

i. For the thermal oxidizer by-pass stack (Vents X and A combined)- continuous process:

(a) 0.91 pound per hour OC, 3.99 TPY OC;
(b) 0.26 pounds per hour PE/PM10, 1.14 TPY PE/PM10;
(c) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(d) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

ii. For the NOx scrubber outlet (venturi and packed column in series; back-up = not combined with Vent X) - continuous process:

(a) 0.12 pound per hour OC, 0.53 TPY OC;
(b) 7.36 pounds per hour NOx, 32.24 TPY NOx; and
(c) 0.018 pound per hour acid vapor, 0.079 TPY acid vapor.

iii. For the carbon adsorber outlet, 0.053 pound per hour OC, 0.23 TPY OC - continuous process.

iv. For all other stacks, combined, 0.72 pound per hour OC, 3.15 TPY OC - continuous process.

v. For the manufacture of batch products, 21.79 pounds per batch OC, 4.51 TPY OC.

vi. For fugitive emissions:

(a) 2.28 TPY OC;
(b) 1.49 TPY acid vapor; and
(c) 0.21 pound per hour PE/PM10, 0.92 TPY PE/PM10.

The Secondary Back-Up Control Device Configuration shall be defined by the confidential process flow diagram labeled "Tolytriazole Manufacturing Secondary Back-Up Control Configuration" and the supporting emission calculations contained in PTI application 14-04456 submitted on 9/22/07 and revised on 1/9/98.

2.d The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control the fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers;

iv. when loading solid materials into the reactors, fugitive emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor; and

v. when product grinding or product loadout is occurring, the capture efficiency of the collection and control system venting to the TT dust scrubber shall be sufficient to minimize or eliminate visible emissions of fugitive dust.

II. Operational Restrictions

1. The primary control plan as specified in A.I.2.a. shall be used at all times except for unforseeable circumstances due to malfunctions, weather, etc. that may hinder normal operating conditions.

2. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

3. The pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber operated in series shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The NOx venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 30 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

5. The NOx packed column scrubber liquor flow rate shall be continuously maintained at a value of not less than 20 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The pH of the NOx venturi scrubber liquor shall be maintained at or above 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

7. The permittee shall determine carbon adsorber breakthrough by using Draeger tubes or other approved methods by Hamilton County Department of Environmental Services. A reading of 5 PPM total organic compounds exiting the carbon drum shall indicate breakthrough has occurred. At this time either a different control option identified within this permit shall be utilized or new carbon shall be added.

The pressure drop across the product packout venturi scrubber shall be continuously maintained at a value between 4 and 6 inchs of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

8. The product pack out venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 21 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

2. The permittee shall properly operate and maintain equipment to continuously monitor the NOx venturi scrubber water flow rate, the NOx packed column scrubber flow rate, the product packout venturi scrubber, the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, and the pH of the scrubber liquor for the NOx venturi scrubber, and the pressure drop across the product pack out venturi scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

a. the scrubber liquor flow rate for the NOx venturi scrubber, in gallons per minute, on a once per shift basis; and

b. the scrubber liquor flow rate for the NOx packed column scrubber, in gallons per minute, on a once per shift basis;

c. the scrubber liquor flow rate for the product packout venturi scrubber, in gallons per minute, on a once per shift basis;

d. the pH of the scrubber liquor for the NOx venturi scrubber , on a once per shift basis;

e. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, in inches of water, on a once per shift basis;

f. the pressure drop across the product packout venturi scrubber, in inches of water, on a once per shift basis; and

g. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment when this emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

3. On days when the Secondary Backup Control option identified in A.I.2.c is utilized, the permittee shall monitor the concentration level of the organic compounds in the exhaust stream from the carbon adsorption system on a once per shift basis using a Draeger tube or other method approved by the Hamilton County Department of Environmental Services.

The permittee shall collect and record the results of all measurements for organic compounds recorded on days when the Secondary Backup Control Plan is utilized. For any organic compound reading greater than 5 PPM, the permittee shall also note what corrective action was taken.

4. The permittee shall collect and record the following information on a monthly basis:

a. the time and date a control option other than the primary control option defined in A.I.2.a. was utilized, and what control option was utilized:

b. the time and date the primary control option resumed; and

c. the reason the primary control option had to be discontinued.

5. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location and color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following NOx venturi scrubber and NOx packed column scrubber parameters were not maintained at or above the required levels:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber;

b. the scrubber liquor flow rate for the NOx venturi scrubber;

c. the scrubber liquor flow rates for the NOx packed column scrubber; and

d. the scrubber liquor pH of the NOx venturi scrubber.

3. The permittee shall submit quarterly reports that summarize the information collected and recorded in A.III.4.

4. The permittee shall submit quarterly deviation (excursion) reports that identify all times when carbon breakthrough was detected and the carbon was not changed.

5. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Back-Up Secondary Control Plan was utilized and the OC concentration exiting the carbon absorption system was greater than 5 PPM. This report should also note any corrective actions taken.

IV. Reporting Requirements (continued)

6. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

7. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted 2.5 years after issuance of the permit, and within 6 months prior to permit renewal.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emssion rate(s) for organic compounds and NOx from the thermal oxidizer when the primary control option is being utilized. Testing of the thermal oxidizer shall include a test of the control efficiency when only this emissions unit is vented to the oxidizer in addition to a test when all emissions units that are vented to it are operating (P008, P014, P015, P022 and P902). The emissions testing shall be done when the primary control plan is being followed.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

for NOx, Method 7E of 40 CFR Part 60, Appendix A
for OC, Method 25 of 40 CFR Part 60, Appendix A.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

V. Testing Requirements (continued)

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

3. If required, the permittee shall demonstrate compliance with the emission limitations outlined in Sections A.2.a through A.2.c of this permit by the stack test results required in A.V.2. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4456 submitted 9/22/97 and revised 1/9/98.

4. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
tolyltriazole manufacturing with two venturi scrubbers, packed column scrubber, carbon adsorber, and thermal oxidizer	Air Toxics Policy	See B.III.1.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. The permit to install for this emissions unit P901 was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the Screen 3 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the Screen 3 model was compared to the Maximum Ground-Level Concentration (MAGLC).

The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Tolune from NOx scrubber (vent A)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.91
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 189.1
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from TO by-pass (vent X)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.91
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 39.4
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from hot oil loops (vent B)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.71
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 212.4
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from carbon adsorber (vent C)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): 0.053
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 15.9
MAGLC (ug/m3): 2685.7

Pollutant: Tolune from N or W still (vent B)
TLV (ug/m3): 180,000
Maximum Hourly Emission Rate (lbs/hr): .0068
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.14
MAGLC (ug/m3): 2685.7

III. Monitoring and/or Record Keeping Requirements (continued)

Physical changes to or in the method of operation of the emissions unit after it's installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in the "Air Toxic Policy" include the following:

a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled: and

c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied with the above changes, the Ohio EPA will not consider the change(s)to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is(are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the Air Toxic Policy:"

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of it's evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where the computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Sodium Tolyltriazole Manufacturing (P902)

Activity Description: PTI 14-4534 issued 6/3/98 for production of sodium tolyltriazole via reaction and packout.

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
sodium tolyltriazole manufacturing, equipped with a venturi scrubber, packed column scrubber, and thermal oxidizer	OAC rule 3745-31-05(A)(3) (PTI 14-4534)	0.11 lb/day organic compounds(OC) 0.02 TPY OC 10.0 lbs/day nitrogen oxides (NOx) 1.83 TPY NOx 0.24 lb/day particulate emissions(PE)/PM10 0.045 TPY PE/PM10 See A.I.2.c. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), OAC rule 3745-17-07(B)(1) and OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from the stacks associated with this emissions unit shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20 percent opacity, as a three-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	See A.I.2.b.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-21-07(G)	The emission limitations specified by this rule are less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain a wet scrubber in a manner which will reduce the NOx emissions by a minimum of 75 percent, by weight.

2.b The permittee shall employ reasonably available control measures (RACM) at all times for the control of fugitive dust emissions associated with this emissions unit. The following control techniques shall be implemented to reduce fugitive dust emissions:

i. the installation and use of hoods, fans, and equipment to adequately enclose, contain, capture, vent and control the fugitive dust emissions;

ii. the ventilation and control equipment shall have a collection efficiency sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design;

iii. all fugitive dust captured shall be vented to the scrubbers; and

iv. when loading solid materials into the reactors, fugitive emissions shall be minimized or eliminated to the extent possible by minimizing the drop height and pour rate into the reactor.

II. Operational Restrictions

1. The emissions from T301 shall be vented to the NOx venturi scrubber, the NOx packed column scrubber, and the thermal oxidizer, operated in series.

2. The average combustion temperature and residence time within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance and shall be greater than or equal to 1 second, respectively.

3. The pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber operated in series shall be continuously maintained at a value of not less than 1 inch of water at all times while the emissions unit is in operation.

The pressure drop across the scrubber may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative pressure drop ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

4. The NOx venturi scrubber liquor flow rate shall be continuously maintained at a value of not less than 30 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

II. Operational Restrictions (continued)

5. The pH of the NOx venturi scrubber liquor shall be maintained at or above 6.

The pH may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative scrubber liquor pH ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

6. The NOx packed column scrubber liquor flow rate shall be continuously maintained at a value of not less than 20 gallons per minute at all times while the emissions unit is in operation.

The scrubber liquor flow rate may be modified should the permittee provide additional information (e.g., testing, engineering studies, etc.) demonstrating that an alternative flow rate ensures ongoing compliance with the applicable mass emission limitation. Written notification of such a modification is required to be submitted to the Hamilton County Department of Environmental Services for approval prior to a change occurring.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was less than the temperature specified in term A.II.2.

2. The permittee shall properly operate and maintain equipment to continuously monitor the NOx venturi scrubber water flow rate, the NOx packed column scrubber flow rate, the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber, and the pH of the scrubber liquor for the NOx venturi scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber on a once per shift basis;

b. the scrubber liquor flow rate for the NOx venturi scrubber, in gallons per minute, on a once per shift basis;

c. the scrubber liquor flow rate for the NOx packed column scrubber, in gallons per minute, on a once per shift basis;

d. the pH of the scrubber liquor for the NOx venturi scrubber , on a once per shift basis; and

e. a log of the downtime for the capture (collection) systems, control devices, and monitoring equipment, when the associated emissions unit was in operation.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the scrubbers and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer did not comply with the temperature limitation specified above.

2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following NOx venturi scrubber and NOx packed column scrubber parameters were not maintained at or above the required levels:

a. the pressure drop across the inlet of the NOx venturi scrubber and the outlet of the NOx packed column scrubber;

b. the scrubber liquor flow rates for the NOx venturi scrubber;

c. the scrubber liquor flow rates for the NOx packed column scrubber; and

d. the scrubber liquor pH of the NOx venturi scrubber.

3. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

4. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the scrubbers serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitation:
Visible PE from any stacks shall not exceed 20 percent opacity, as a 6-minute average, except as specified by rule.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after the issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the 75% control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system)for NOx across the inlet of the venturi scrubber and outlet of the packed column scrubber.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NOx, Method 7E of 40 CFR Part 60, Appendix A

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Hamilton County Department of Environmental Services' refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Hamilton County Department of Environmental Services within 30 days following completion of the test(s).

3. Emission Limtations:
0.11 lb/day of OC and 0.02 TPY OC
10.0 lbs/day of NOx and 1.83 TPY NOx
0.24 lb/day of PE/PM10 and 0.045 TPY PE/PM10

Applicable Compliance Methods:
If required, the permittee shall demonstrate compliance with the above emission limitations by the stack test results required in A.V.2. and A.V.4. and the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in PTI application 14-4534 submitted February 9, 1998.

4. This emissions unit shall be included in the test of the thermal oxidizer which includes emissions units P014, P015, P022, P901 and P902. The specific stack test requirements for the thermal oxidizer test are specified in A.V.6 for emission unit P014.

5. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
If required, the permittee shall demonstrate compliance with the opacity limitations above through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Methanol Storage Tank (T001)

Activity Description: 16,500 gallon fixed roof methanol storage tank

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
16,500-gallon methanol storage tank	OAC rule 3745-31-05(A)(3) (PTI 14-1703)	1.56 TPY of organic compounds (OC) *The TPY emission limitation established in PTI 14-1703 was based on the emission unit's potential to emit. Therefore, no monitoring, record keeping or reporting requirements are necessary to ensure ongoing compliance.
	40 CFR Part 60, Subpart Kb	See A.III.1.
	OAC rule 3745-21-07(D)	The permittee shall employ a submerged fill pipe when loading volatile photochemically reactive materials.

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.116b(a) and (b), the Permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

IV. Reporting Requirements

None

V. Testing Requirements

1. Compliance with the OC emission limitation of 1.56 TPY may be demonstrated by the equations and methods specified in AP-42, Fifth Edition, Section 7.1(revised 1/95).

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Phthalic Anhydride Storage Tank (T003)

Activity Description: 30,000 gallon storage tank for phthalic anhydride

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
30,000-gallon phthalic anhydride storage tank with ambient air sublimate system	OAC rule 3745-31-05(A)(3) (PTI 14-1969)	0.38 TPY of organic compound (OC) See A.I.2.
	40 CFR Part 60, Subpart Kb	See A.III.1. and A.III.2.
	OAC rule 3745-21-07(D)	The permittee shall employ a submerged fill pipe when loading volatile photochemically reactive materials.

2. Additional Terms and Conditions

2.a The permittee shall operate and maintain a sublimate containment device in a manner that will reduce the OC emissions by a minimum of 90% by weight.

II. Operational Restrictions

1. The ambient air sublimate system shall be utilized at all times this emission unit is in operation.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.116b(a) and (b), the permittee shall keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.

2. In accordance with 40 CFR 60.116b(a) and (b), the permittee shall maintain a record of the volatile organic liquid stored, the period of storage, and the maximum true vapor pressure of that volatile organic liquid during the respective storage period.

3. The permittee shall mainain an operations log documenting the use of the ambient air sublimate system. Should the sublimate system not be utilized, the time, date, and the reason for its non-use shall be recorded.

IV. Reporting Requirements

1. The permittee shall submit quarterly temperature deviation (excursion) reports that identify all times the ambient air sublimation system was not utilized.

IV. Reporting Requirements (continued)

2. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Compliance with the OC emission limitation of 0.38 TPY may be demonstrated by the equations and methods specified in AP-42, Fifth Edition, Section 7.1(revised 1/95) multiplied by the overall control efficiency of 90%.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Fly Ash Handling (Z001)

Activity Description: fly ash from coal boiler baghouse to truck loading for offsite disposal

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
coal unloading	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	Dumping shall be accomplished at a slow rate and in a partially enclosed area to minimize or eliminate the visible emissions of fugitive dust.
fly ash handling system with baghouse	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation established in OAC rule 3745-17-07(A) is less stringent than that established pursuant to OAC rule 3745-17-08(B).
	OAC rule 3745-17-07(B)(1)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	No person shall cause or permit any fugitive dust source to be operated; or any materials to be handled, transported, or stored; without taking or installing reasonably available control measures(RACM) to prevent fugitive dust from becoming airborne. Currently, the venting of the fugitive emissions from the fly ash handling system to a baghouse satisfiesthe RACM requirements. There shall be no visible particulate emissions from the baghouse exhaust stack.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-11(B)	2.37 lbs of particulate emissions/hr from the exhaust gases of the baghouse (based on Table 1 of OAC rule 3745-17-11).
fly ash unloading with spray bars	OAC rule 3745-17-07(B)	Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average, except as specified by rule.
	OAC rule 3745-17-08(B)	Spray bars (wet suppression) shall be utilized and water shall be applied at all times while fly ash dumping is occurring. The water application rate shall be sufficent to minimize or eliminate visible emissions of fugitive dust.

2. Additional Terms and Conditions

None

II. Operational Restrictions

1. The particulate emissions from the fly ash handling system shall be vented to the fly ash baghouse.

2. The pressure drop across the fly ash baghouse shall be maintained within the range of 3 to 6 inches of water while the emissions unit is in operation.

3. The spray bars (wet suppression) shall be utilized at all times when fly ash unloading is occurring.

4. Should the control measures specified in A.II fail to be of sufficient effectiveness to demonstrate compliance with the visibile emission limitations specified in A.I.1, additional control measures shall be implemented.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly install (within 3 months after issuance of this permit), operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on daily basis.

2. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. the total duration of any visible emission incident; and
c. any corrective actions taken to eliminate the visible emissions.

III. Monitoring and/or Record Keeping Requirements (continued)

3. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions from the coal unloading and fly ash handling system serving this emissions unit. The presence or absence of any visible fugitive emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. whether the emissions are representative of normal operations;
b. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
c. the total duration of any visible emission incident; and
d. any corrective actions taken to minimize or eliminate the visible emissions.

4. The permittee shall maintained records indicating that the wet suppression system was in operation during fly ash unloading operations.

IV. Reporting Requirements

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the coal unloading and fly ash handling system serving this emissions unit, and (c) describe any corrective actions taken to eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

3. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the spray bars (wet suppression system) was not utilized when fly ash unloading was occurring.

4. The quarterly deviation reports shall be submitted in accordance with the reporting requirements specified in Part I-General Term and Condition A.1.c.

V. Testing Requirements

1. Emission Limitation:
Visible emissions of fugitive dust shall not exceed 20% opacity, as a 3-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

2. Emission Limitation:

No visible particulate emissions from exhaust gases exiting the baghouse stack

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 22 and the procedures specified in OAC rule 3745-17-03(B)(3).

V. Testing Requirements (continued)

3. Compliance with the particulate emission limitation established in OAC rule 3745-17-11 may be determined by use of the emission factor of 2.2 lbs PE/ton of fly ash* handled multiplied by the worse case throughput of 1 ton/hr multiplied by the baghouse control efficiency of 99%.

2.2 lbs PE/ton X 1 ton/hr x (1-.99) = .022 lbs PE/Hr

*Emission factor taken from AP-42, Fifth Edition, Section 11, Table 11.17-4, Product Transfer and Conveying for Lime (similar to fly ash), updated 2/98.

If required, compliance with the PM emission limit shall be demonstrated by emission tests performed in accordance with 40 CFR Part 60, Appendix A, Method 5.

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Spray Dryer Heater IA-D420 (Z107)

Activity Description: 18 to 20 MMBtu/hr spray dryer serving P011 PTI 14-086

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
20 MMBtu/hr natural gas spray dryer heater	OAC rule 3745-31-05(A)(3) (PTI 14-0086)	The PTI required compliance with applicable law at the time of issuance of the permit.
	OAC rule 3745-17-07(A)	This emissions unit is exempt from the visible particulate emission limitations in OAC rule 3745-17-07(A), pursuant to OAC rule 3745-17-07(A)(3)(h), because the emissions unit is not subject to the requirements of OAC rule 3745-17-11.
	OAC rule 3745-17-11	The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. In addition, Table I of OAC rule 3745-17-11 does not aplly because the process weight, as defined in OAC rule 3745-17-10(B)(14), is equal to zero.
	OAC rule 3745-21-08(B)	None, see A.I.2.a below.
	OAC rule 3745-23-06(B)	None, see A.I.2.b below.

2. Additional Terms and Conditions

2.a The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in Permit to Install 14-0086.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

2.b The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by committing to comply with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in Permit to Install 14-0086.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

B. State Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

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6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR-2002-0058; FRL-]

RIN 2060-AG69

National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The EPA is promulgating national emission standards for hazardous air pollutants (NESHAP) for industrial, commercial, and institutional boilers and process heaters. The EPA has identified industrial, commercial, and institutional boilers and process heaters as major sources of hazardous air pollutants (HAP) emissions. The final rule will implement section 112(d) of the Clean Air Act (CAA) by requiring all major sources to meet HAP emissions standards reflecting the application of the maximum achievable control technology (MACT). The final rule is expected to reduce HAP emissions by 50,600 to 58,000 tons per year (tpy).

The HAP emitted by facilities in the boiler and process heater source category include arsenic, cadmium, chromium, hydrogen chloride (HCl), hydrogen fluoride, lead, manganese,

mercury, nickel, and various organic HAP. Exposure to these substances has been demonstrated to cause adverse health effects such as irritation to the lung, skin, and mucus membranes, effects on the central nervous system, kidney damage, and cancer. These adverse health effects associated with the exposure to these specific HAP are further described in this preamble. In general, these findings only have been shown with concentrations higher than those typically in the ambient air.

The final rule contains numerous compliance provisions including health-based compliance alternatives for the hydrogen chloride and total selected metals emission limits.

EFFECTIVE DATE: [INSERT THE DATE 60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]

ADDRESSES: The official public docket is the collection of materials that is available for public viewing at the Office of Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center, Room B-102, 1301 Constitution Avenue, NW, Washington, DC.

FOR FURTHER INFORMATION CONTACT: For information concerning applicability and rule determinations, contact your State or local representative or appropriate EPA Regional Office representative. For information concerning rule development, contact Jim Eddinger, Combustion Group,

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Emission Standards Division (C439-01), U.S. EPA, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5426, fax number (919) 541-5450, electronic mail address eddinger.jim@epa.gov.

SUPPLEMENTARY INFORMATION: Regulated Entities. Categories and entities potentially regulated by this action include:

Category	NAICS Code	SIC Code	Examples of potentially regulated entities
Any industry using a boiler or process heater as defined in the final rule	211	13	Extractors of crude petroleum and natural gas
	321	24	Manufacturers of lumber and wood products
	322	26	Pulp and paper mills
	325	28	Chemical manufacturers
	324	29	Petroleum refineries, and manufacturers of coal products
	316, 326, 339	30	Manufacturers of rubber and miscellaneous plastic products
	331	33	Steel works, blast furnaces
	332	34	Electroplating, plating, polishing, anodizing, and coloring
	336	37	Manufacturers of motor vehicle parts and accessories
	221	49	Electric, gas, and sanitary services

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622	80	Health services
611	82	Educational services

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists examples of the types of entities EPA is now aware could potentially be regulated by this action. Other types of entities not listed could also be affected. To determine whether your facility, company, business, organization, etc., is regulated by this action, you should examine the applicability criteria in §63.7485 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding FOR FURTHER INFORMATION CONTACT section.

Docket. The EPA has established an official public docket for this action under Docket ID No. OAR-2003-0058 and Docket ID No. A-96-47. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. All items may not be listed under both docket numbers, so interested parties should inspect both docket numbers to ensure that they have received all materials relevant to the final rule. Although a part of the official docket, the public docket does not include Confidential

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Business Information (CBI) or other information whose disclosure is restricted by statute. The official public docket is the collection of materials that is available for public viewing at the Office of Air and Radiation Docket and Information Center (Air Docket) in the EPA Docket Center, Room B102, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket is (202) 566-1742. A reasonable fee may be charged for copying docket materials.

Electronic Access. You may access this Federal Register document electronically through the EPA Internet under the "Federal Register" listings at http://www.epa.gov/fedrgstr/.

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at http://www.epa.gov/edocket/ to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Once in the system, select "search," then key in the appropriate docket identification number.

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Worldwide Web (WWW). In addition to being available in the docket, an electronic copy of the final rule is also available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of the final rule will be posted on the TTN policy and guidance page for newly proposed or promulgated rules at the following address: http://www.epa.gov/ttn/oarpg. The TTN provides information and technology exchange in various areas of air pollution control. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

Judicial Review. Under section 307(b)(1) of the CAA, judicial review of the NESHAP is available by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by [INSERT THE DATE 60 DAYS AFTER PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]. Only those objections to the final rule that were raised with reasonable specificity during the period for public comment may be raised during judicial review. Under section 307(b)(2) of the CAA, the requirements that are the subject of the final rule may not be challenged later in civil or criminal proceedings brought by EPA to enforce these requirements.

Background Information Document. The EPA proposed the NESHAP for industrial, commercial, and institutional boilers

and process heaters on January 13, 2003 (68 FR 1660) and received 218 comment letters on the proposal. A memorandum "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, Summary of Public Comments and Responses," containing EPA's responses to each public comment is available in Docket No. OAR-2002-0058.

Outline. The information presented in this preamble is organized as follows:

I. Background Information
A. What is the statutory authority for the final rule?
B. What criteria are used in the development of NESHAP?
C. How was the final rule developed?
D. What is the relationship between the final rule and other combustion rules?
E. What are the health effects of pollutants emitted from industrial, commercial, and institutional boilers and process heaters?
II. Summary of the Final Rule
A. What source categories and subcategories are affected by the final rule?
B. What is the affected source?
C. What pollutants are emitted and controlled?
D. Does the final rule apply to me?
E. What are the emission limitations and work practice standards?
F. What are the testing and initial compliance requirements?
G. What are the continuous compliance requirements?
H. What are the notification, recordkeeping and reporting requirements?
I. What are the health-based compliance alternatives and how do I demonstrate eligibility?
III. What are the significant changes since proposal?
A. Definition of Affected Source
B. Sources Not Covered by the NESHAP
C. Emission Limits
D. Definitions Added and Revised
E. Requirements for Sources in Subcategories Without

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Emission Limits or Work Practice Requirements
F. Carbon Monoxide Work Practice Emission Levels and Requirements
G. Fuel Analysis Option
H. Emissions Averaging
I. Opacity Limit
J. Operating Limit Determination
K. Revision of Compliance Dates
IV. What are the responses to significant comments?
A. Applicability
B. Format
C. Compliance Schedule
D. Subcategorization
E. MACT Floor
F. Beyond the MACT Floor
G. Work Practice Requirements
H. Compliance
I. Emissions Averaging
J. Risk-based Approach
V. Impacts of the Final Rule
A. What are the air quality impacts?
B. What are the water and solid waste impacts?
C. What are the energy impacts?
D. What are the control costs?
E. What are the economic impacts?
F. What are the social costs and benefits of the final rule?
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A. Executive Order 12866: Regulatory Planning and Review
B. Paperwork Reduction Act
C. Regulatory Flexibility Act
D. Unfunded Mandates Reform Act of 1995
E. Executive Order 13132: Federalism
F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
H. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer and Advancement Act
J. Congressional Review Act

I. Background Information

A. What is the statutory authority for the final rule?

Section 112 of the CAA requires us to list categories

and subcategories of major sources and area sources of HAP and to establish NESHAP for the listed source categories and subcategories. Industrial boilers, commercial and institutional boilers, and process heaters were listed on July 16, 1992 (57 FR 31576). Major sources of HAP are those that have the potential to emit greater than 10 tpy of any one HAP or 25 tpy of any combination of HAP.

B. What criteria are used in the development of NESHAP?

Section 112(c)(2) of the CAA requires that we establish NESHAP for control of HAP from both existing and new major sources, based upon the criteria set out in CAA section 112(d). The CAA requires the NESHAP to reflect the maximum degree of reduction in emissions of HAP that is achievable, taking into consideration the cost of achieving the emission reduction, any non-air quality health and environmental impacts, and energy requirements. This level of control is commonly referred to as the MACT.

The minimum control level allowed for NESHAP (the minimum level of stringency for MACT) is the "MACT floor," as defined under section 112(d)(3) of the CAA. The MACT floor for existing sources is the emission limitation achieved by the average of the best-performing 12 percent of existing sources for categories and subcategories with 30 or more sources, or the average of the best-performing five

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sources for categories or subcategories with fewer than 30 sources. For new sources, the MACT floor cannot be less stringent than the emission control achieved in practice by the best-controlled similar source.

C. How was the final rule developed?

We proposed standards for industrial, commercial, and institutional boilers and process heaters on January 13, 2003 (68 FR 1660). Public comments were solicited at the time of proposal. The public comment period lasted from January 13, 2003, to March 14, 2003.

We received a total of 218 public comment letters on the proposed rule. Comments were submitted by industry trade associations, owners/operators of boilers and process heaters, State regulatory agencies and their representatives, and environmental groups. Today's final rule reflects our consideration of all of the comments and additional information received. Major public comments on the proposed rules, along with our responses to those comments, are summarized in this preamble.

D. What is the relationship between the final rule and other combustion rules?

The final rule regulates source categories covering industrial boilers, institutional and commercial boilers, and process heaters. These source categories potentially

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include combustion units that are already regulated by other MACT standards. Therefore, we are excluding from the final rule any combustion units that are already or will be subject to regulation under another MACT standard under 40 CFR part 63.

Combustion units that are regulated by other standards and are therefore excluded from the final rule include solid waste incineration units covered by section 129 of the CAA; boilers or process heaters required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by the hazardous waste combustor NESHAP in 40 CFR part 63, subpart EEE[1]; and recovery boilers or furnaces covered by 40 CFR part 63, subpart MM.

With regards to solid waste incineration units covered by section 129 of the CAA, EPA solicited on February 17, 2004 (69 FR 7390) public comments on the definition of "commercial and industrial solid waste incineration unit" for the purpose of determining which combustion sources to regulate under section 129 and which to regulate under section 112 (e.g., boilers and process heaters). As stated above, combustion units covered under section 129 are not subject to the final rule.

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[1]Please note that boilers that burn small quantities of hazardous waste under the exemptions provided by 40 CFR 266.108 are subject to today's final rule.

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Electric utility steam generating units are not subject to the final rule. An electric utility steam generating unit is a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit. Non-fossil fuel-fired utility boilers and electric utility steam generating units less than 25 megawatts are covered by the final rule.

In 1986, EPA codified the NSPS for industrial boilers (40 CFR part 60, subparts Db and Dc) and revised portions of them in 1999. The NSPS regulates emissions of particulate matter (PM), sulfur dioxide, and nitrogen oxides from boilers constructed after June 19, 1984. Sources subject to the NSPS are also subject to the final rule because the final rule regulates sources of hazardous air pollutants while the NSPS does not. However, in developing the final rule for industrial, commercial, and institutional boilers and process heaters, EPA minimized the monitoring requirements, testing requirements, and recordkeeping requirements to avoid duplicating requirements.

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Because of the broad applicability of the final rule due to the definition of a process heater, certain process heaters could appear to fit the applicability of another existing MACT rule. We have, therefore, included in the list of combustion units not subject to the final rule refining kettles subject to the secondary lead MACT rule (40 CFR part 63, subpart X); ethylene cracking furnaces covered by 40 CFR part 63, subpart YY; and blast furnace stoves described in the EPA document entitled "National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Plants - Background Information for Proposed Standards" (EPA-453/R-01-005).

E. <u>What are the health effects of pollutants emitted from industrial, commercial, and institutional boilers and process heaters</u>?

The final rule protects air quality and promotes the public health by reducing emissions of some of the HAP listed in section 112(b)(1) of the CAA. As noted above, emissions data collected during development of the proposed rule show that HCl emissions represent the predominant HAP emitted by industrial boilers. Industrial boilers emit lesser amounts of hydrogen fluoride, chlorine, metals (arsenic, cadmium, chromium, mercury, manganese, nickel, and lead), and organic HAP emissions. Although numerous organic

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HAP may be emitted from industrial boilers and process heaters, only a few account for essentially all the mass of organic HAP emissions. These organic HAP are: formaldehyde, benzene, and acetaldehyde.

Exposure to high levels of these HAP is associated with a variety of adverse health effects. These adverse health effects include chronic health disorders (e.g., irritation of the lung, skin, and mucus membranes, effects on the central nervous system, and damage to the kidneys), and acute health disorders (e.g., lung irritation and congestion, alimentary effects such as nausea and vomiting, and effects on the kidney and central nervous system). We have classified three of the HAP as human carcinogens and five as probable human carcinogens. Our screening assessment for respiratory HAP and for central nervous system (CNS) HAP, using health protective assumptions, indicates that manganese and chlorine are the only boiler-related HAP that are reasonably expected to approach health based criteria concentrations at receptor locations at or beyond facility boundaries. Emissions of all other HAP modeled on an individual basis appears to be insignificant relative to the concentration that would produce the health effects that they represent. The maximal hazard index (HI) for summation of the HAP modeled in the screening assessment

for respiratory effects, including chlorine, was less than 3. The maximal HI for summation of the HAP modeled in the screening assessment for CNS effects, including manganese, was less than 3. Therefore, effects noted below for HAP at high concentrations are not expected to occur prior or after regulation as a result of emissions from these facilities, and are provided to illustrate the nature of the contaminant's effects at high dose. A screening assessment was also conducted for acute effects, and no exceedances were seen. Therefore, potential acute effects are not discussed below. However, to the extent the adverse effects do occur, the final rule will reduce emissions and subsequent exposures.

Acetaldehyde

Acetaldehyde is ubiquitous in the environment and may be formed in the body from the breakdown of ethanol (ethyl alcohol). In humans, symptoms of chronic (long-term) exposure to acetaldehyde resemble those of alcoholism. Long-term inhalation exposure studies in animals reported effects on the nasal epithelium and mucous membranes, and increased kidney weight. The EPA has classified acetaldehyde as a probable human carcinogen (Group B2) based on animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.

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Arsenic

Chronic (long-term) inhalation exposure to inorganic arsenic in humans is associated with irritation of the skin and mucous membranes. Human data suggest a relationship between inhalation exposure for women working at or living near metal smelters and an increased risk of reproductive effects. Inorganic arsenic exposure in humans by the inhalation route has been shown to be strongly associated with lung cancer, while ingestion of inorganic arsenic in humans has been linked to a form of skin cancer and also to bladder, liver, and lung cancer. The EPA has classified inorganic arsenic as a Group A, human carcinogen.

Benzene

Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene. The EPA has classified benzene as a Group A, known human carcinogen.

Beryllium

Chronic (long-term) inhalation exposure of humans to high levels of beryllium has been reported to cause chronic beryllium disease (berylliosis), in which granulomatous (noncancerous) lesions develop in the lung. Inhalation

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exposure to high levels of beryllium has been demonstrated to cause lung cancer in rats and monkeys. Human studies are limited, but suggest a causal relationship between beryllium exposure and an increased risk of lung cancer. We have classified beryllium as a Group B1, probable human carcinogen, when inhaled; data are inadequate to determine whether beryllium is carcinogenic when ingested.

Cadmium

Chronic (long-term) inhalation or oral exposure to cadmium leads to a build-up of cadmium in the kidneys that can cause kidney disease. Cadmium has been shown to be a developmental toxicant at high doses in animals, resulting in fetal malformations and other effects, but no conclusive evidence exists in humans. Animal studies have demonstrated an increase in lung cancer from long-term inhalation exposure to cadmium. The EPA has classified cadmium as a Group B1, probable carcinogen.

Chlorine

Chlorine is a commonly used household cleaner and disinfectant. Chlorine is an irritant to the eyes, the upper respiratory tract, and lungs. Chronic (long-term) exposure to chlorine gas in workers has resulted in respiratory effects, including eye and throat irritation and airflow obstruction. No information is available on the

carcinogenic effects of chlorine in humans from inhalation exposure. A National Toxicology Program (NTP) study showed no evidence of carcinogenic activity in male rats or male and female mice, and equivocal evidence in female rats, from ingestion of chlorinated water. The EPA has not classified chlorine for potential carcinogenicity.

Chromium

Chromium may be emitted by industrial boilers in two forms, trivalent chromium (chromium III) or hexavalent chromium (chromium VI). The respiratory tract is the major target organ for chromium VI toxicity for inhalation exposures. Bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic high dose exposure in occupational settings to chromium VI. Limited human studies suggest that chromium VI inhalation exposure may be associated with complications during pregnancy and childbirth, while animal studies have not reported reproductive effects from inhalation exposure to chromium VI. Human and animal studies have clearly established that inhaled chromium VI is a carcinogen, resulting in an increased risk of lung cancer. The EPA has classified chromium VI as a Group A, human carcinogen.

Chromium III is less toxic than chromium VI. The respiratory tract is also the major target organ for

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chromium III toxicity, similar to chromium VI. Chromium III is an essential element in humans, with a daily intake of 50 to 200 micrograms per day recommended for an adult. The body can detoxify some amount of chromium VI to chromium III. The EPA has not classified chromium III with respect to carcinogenicity.

Formaldehyde

Exposure to formaldehyde irritates the eyes, nose, and throat. Reproductive effects, such as menstrual disorders and pregnancy problems, have been reported in female workers exposed to high levels of formaldehyde. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. The EPA considers formaldehyde a probable human carcinogen (Group B2).

Hydrogen chloride

Hydrogen chloride, also called hydrochloric acid, is corrosive to the eyes, skin, and mucous membranes at high concentration. Chronic (long-term) occupational exposure to high levels of hydrochloric acid has been reported to cause gastritis, bronchitis, and dermatitis in workers. Prolonged exposure to lower concentrations may also cause dental discoloration and erosion. No information is available on

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the reproductive or developmental effects of hydrochloric acid in humans. In rats exposed to high levels of hydrochloric acid by inhalation, altered estrus cycles have been reported in females and increased fetal mortality and decreased fetal weight have been reported in offspring. The EPA has not classified hydrochloric acid for carcinogenicity.

Hydrogen fluoride

Chronic (long-term) exposure to fluoride at low levels has a beneficial effect of dental cavity prevention and may also be useful for the treatment of osteoporosis. Exposure to higher levels of fluoride may cause dental fluorosis. One study reported menstrual irregularities in women occupationally exposed to fluoride. The EPA has not classified hydrogen fluoride for carcinogenicity.

Lead

Lead can cause a variety of effects at low dose levels. Chronic (long-term) exposure to high levels of lead in humans results in effects on the blood, central nervous system (CNS), blood pressure, and kidneys. Children are particularly sensitive to the chronic effects of lead, with slowed cognitive development, reduced growth and other effects reported. Reproductive effects, such as decreased sperm count in men and spontaneous abortions in women, have

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been associated with lead exposure. The developing fetus is at particular risk from maternal lead exposure, with low birth weight and slowed postnatal neurobehavioral development noted. Human studies are inconclusive regarding lead exposure and cancer, while animal studies have reported an increase in kidney cancer from high-dose lead exposure by the oral route. The EPA has classified lead as a Group B2, probable human carcinogen.

Manganese

Health effects in humans have been associated with both deficiencies and excess intakes of manganese. Chronic (long-term) exposure to low levels of manganese in the diet is considered to be nutritionally essential in humans, with a recommended daily allowance of 2 to 5 milligrams per day (mg/d). Chronic exposure to high levels of manganese by inhalation in humans results primarily in CNS effects. Visual reaction time, hand steadiness, and eye-hand coordination were affected in chronically-exposed workers. Impotence and loss of libido have been noted in male workers afflicted with manganism attributed to high-dose inhalation exposures. The EPA has classified manganese in Group D, not classifiable as to carcinogenicity in humans.

Mercury

Mercury exists in three forms: elemental mercury,

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inorganic mercury compounds (primarily mercuric chloride), and organic mercury compounds (primarily methyl mercury). Each form exhibits different health effects. Various major sources may release elemental or inorganic mercury; environmental methyl mercury is typically formed by biological processes after mercury has precipitated from the air.

Chronic (long-term) exposure to elemental mercury in humans also affects the CNS, with effects such as increased excitability, irritability, excessive shyness, and tremors. The EPA has not classified elemental mercury with respect to cancer.

The major effect from chronic exposure to inorganic mercury is kidney effects. Reproductive and developmental animal studies have reported effects such as alterations in testicular tissue, increased embryo resorption rates, and abnormalities of development. Mercuric chloride (an inorganic mercury compound) exposure has been shown to result in tumors in experimental animals. The EPA has classified mercuric chloride as a Group C, possible human carcinogen.

Nickel

Nickel is an essential element in some animal species, and it has been suggested it may be essential for human

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nutrition. Nickel dermatitis, consisting of itching of the fingers, hand and forearms, is the most common effect in humans from chronic (long-term) skin contact with nickel. Respiratory effects have also been reported in humans from inhalation exposure to nickel. No information is available regarding the reproductive or developmental effects of nickel in humans, but animal studies have reported such effects, although a consistent dose-response relationship has not been seen. Nickel forms released from industrial boilers include soluble nickel compounds, nickel subsulfide, and nickel carbonyl. Human and animal studies have reported an increased risk of lung and nasal cancers from exposure to nickel refinery dusts and nickel subsulfide. Animal studies of soluble nickel compounds (i.e., nickel carbonyl) have reported lung tumors. The EPA has classified nickel refinery subsulfide as Group A, human carcinogens and nickel carbonyl as a Group B2, probable human carcinogen.

Selenium

Selenium is a naturally occurring substance that is toxic at high concentrations but is also a nutritionally essential element. Studies of humans chronically (long-term) exposed to high levels of selenium in food and water have reported discoloration of the skin, pathological deformation and loss of nails, loss of hair, excessive tooth

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decay and discoloration, lack of mental alertness, and listlessness. The consumption of high levels of selenium by pigs, sheep, and cattle has been shown to interfere with normal fetal development and to produce birth defects. Results of human and animal studies suggest that supplementation with some forms of selenium may result in a reduced incidence of several tumor types. One selenium compound, selenium sulfide, is carcinogenic in animals exposed orally. We have classified elemental selenium as a Group D, not classifiable as to human carcinogenicity, and selenium sulfide as a Group B2, probable human carcinogen.

II. Summary of the Final Rule

A. What source categories and subcategories are affected by the final rule?

The final rule affects industrial boilers, institutional and commercial boilers, and process heaters. In the final rule, process heater means an enclosed device using controlled flame, that is not a boiler, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to heat a transfer material for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not directly come into contact with process materials. Process heaters do not include units used for

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comfort heat or space heat, food preparation for on-site consumption, or autoclaves. Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Waste heat boilers are excluded from the definition of boiler. A waste heat boiler (or heat recovery steam generator) means a device, without controlled flame combustion, that recovers normally unused energy and converts it to usable heat. Waste heat boilers incorporating duct or supplemental burners that are designed to supply 50 percent or more of the total rated heat input capacity of the waste heat boiler are considered boilers and not waste heat boilers. Emissions from a combustion unit with a waste heat boiler are regulated by the applicable standards for the particular type of combustion unit. For example, emissions from a commercial or industrial solid waste incineration unit, or other incineration unit with a waste heat boiler are regulated by standards established under section 129 of the CAA.

Hot water heaters also are not regulated under the final rule. A hot water heater is a closed vessel, with a capacity of no more than 120 U.S. gallons, in which water is heated by combustion of gaseous or liquid fuel and is withdrawn for use external to the vessel at pressures not

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exceeding 160 pounds per square inch gauge and water temperatures not exceeding 210 degree Fahrenheit (99 degrees Celsius).

Temporary boilers also are not regulated under the final rule. A temporary boiler is any gaseous or liquid fuel-fired boiler that is designed, and is capable of, being carried or moved from one location to another, and remains at any one location for less than 180 consecutive days. Additionally, any new temporary boiler that replaces an existing temporary boiler and is intended to perform the same or similar function will be included in the determination of the consecutive 180-day time period.

Boilers or process heaters that are used specifically for research and development are not regulated under the final rule. However, units that only provide steam to a process at a research and development facility are still subject to the final rule.

B. What is the affected source?

In the final rule, the affected source is defined as follows: (1) the collection of all existing industrial, commercial, or institutional boilers and process heaters within a subcategory located at a major source; or (2) each new or reconstructed industrial, commercial or institutional boiler and process heater located at a major source.

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The affected source does not include combustion units that are subject to another standard under 40 CFR part 63, or covered by other standards listed in this preamble.

C. What pollutants are emitted and controlled?

Boilers and process heaters can emit a wide variety of HAP, depending on the material burned. Because of the large number of HAP potentially present in emissions and the disparity in the quantity and quality of the emissions information available, we use several surrogates to control multiple HAP in the final rule. This will reduce the burden of implementation and compliance on both regulators and the regulated community.

We grouped the HAP into four common categories: mercury, non-mercury metallic HAP, inorganic HAP, and organic HAP. In general, the pollutants within each group have similar characteristics and can be controlled with the same techniques.

Next, we identified compounds that could be used as surrogates for all the compounds in each pollutant category. For the non-mercury metallic HAP, we chose to use PM as a surrogate. Most, if not all, non-mercury metallic HAP emitted from combustion sources will appear on the flue gas fly-ash. Therefore, the same control techniques that would be used to control the fly-ash PM will control non-mercury

metallic HAP. Particulate matter was also chosen instead of specific metallic HAP because all fuels do not emit the same type and amount of metallic HAP but most generally emit PM. The use of PM as a surrogate will also eliminate the cost of performance testing to comply with numerous standards for individual metals.

However, we are sensitive to the fact that some sources burn fuels containing very little metals, but would have sufficient PM emissions to require control under the PM provisions of the proposed rule. In such cases, PM would not be an appropriate surrogate for metallic HAP. Therefore, in the final rule, an alternative metals emission limit is included. A source may choose to comply with the alternative metals emissions limit instead of the PM limit to meet the final rule.

For inorganic HAP, we chose to use HCl as a surrogate. The emissions test information available indicate that the primary inorganic HAP emitted from boilers and process heaters are acid gases, with HCl present in the largest amounts. Other inorganic compounds emitted are found in much smaller quantities. Also, control technologies that would reduce HCl would also control other inorganic compounds that are acid gases. Thus, the best controls for HCl would also be the best controls for other inorganic HAP

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that are acid gases. Therefore, HCl is a good surrogate for inorganic HAP because controlling HCl will result in a corresponding control of other inorganic HAP emissions.

For organic HAP, we chose to use carbon monoxide (CO) as a surrogate to represent the variety of organic compounds, including dioxins, emitted from the various fuels burned in boilers and process heaters. Because CO is a good indicator of incomplete combustion, there is a direct correlation between CO emissions and the formation of organic HAP emissions. Monitoring equipment for CO is readily available, which is not the case for organic HAP. Also, it is significantly easier and less expensive to measure and monitor CO emissions than to measure and monitor emissions of each individual organic HAP. Therefore, using CO as a surrogate for organic HAP is a reasonable approach because minimizing CO emissions will result in minimizing organic HAP emissions.

D. Does the final rule apply to me?

The final rule applies to you if you own or operate a boiler or process heater located at a major source meeting the requirements in this preamble.

E. What are the emission limitations and work practice standards?

You must meet the emission limits and work practice

standards for the subcategories in Table 1 of this preamble for each of the pollutants listed. Emission limits and work practice standards were developed for new and existing sources; and for large, small, and limited use solid, liquid, and gas fuel-fired units. Large units are those watertube boilers and process heaters with heat input capacities greater than 10 million British thermal units per hour (MMBtu/hr). Small units are any firetube boilers or any boiler and process heater with heat input capacities less than or equal to 10 MMBtu/hr. Limited use units are those large units with capacity utilizations less than or equal to 10 percent as required in a federally enforceable permit.

If your new or existing boiler or process heater is permitted to burn a solid fuel (either as a primary fuel or a backup fuel), or any combination of solid fuel with liquid or gaseous fuel, the unit is in one of the solid subcategories. If your new or existing boiler or process heater burns a liquid fuel, or a liquid fuel in combination with a gaseous fuel, the unit is in one of the liquid subcategories, except if the unit burns liquid only during periods of gas curtailment. If your new or existing boiler or process heater burns a gaseous fuel not combined with any liquid or solid fuels, or burns liquid fuel only during

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periods of gas curtailment or gas supply emergencies, the unit is in the gaseous subcategory.

Table 1. EMISSION LIMITS AND WORK PRACTICE STANDARDS FOR BOILERS AND PROCESS HEATERS (pounds per million British thermal units (lb/MMBtu))

Source	Subcategory	Particulate Matter (PM)	or	Total Selected Metals	Hydrogen Chloride (HCl)	Mercury (Hg)	Carbon Monoxide (CO)(ppm
New Boiler or Process Heater	Solid Fuel, Large Unit	0.025	or	0.0003	0.02	0.000003	400 (@7%oxygen)
	Solid Fuel, Small Unit	0.025	or	0.0003	0.02	0.000003	--
	Solid Fuel, Limited Use	0.025	or	0.0003	0.02	0.000003	400 (@7%oxygen)
	Liquid Fuel, Large Unit	0.03		--	0.0005	--	400 (@3%oxygen)
	Liquid Fuel, Small Unit	0.03		--	0.0009	--	--
	Liquid Fuel, Limited Use	0.03		--	0.0009	--	400 (@3%oxygen)
	Gaseous Fuel Large Unit	--		--	--	--	400 (@3%oxygen)

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	Gaseous Fuel Small Unit	--	--	--	--	--
	Gaseous Fuel Limited Use	--	--	--	--	400 (@3%oxygen)
Existing Boiler or Process Heater	Solid Fuel, Large Unit	0.07 or	0.001	0.09	0.000009	--
	Solid Fuel, Small Unit	--	--	--	--	--
	Solid Fuel, Limited Use	0.21 or	0.004	--	--	--
	Liquid Fuel, Large Unit	--	--	--	--	--
	Liquid Fuel, Small Unit	--	--	--	--	--
	Liquid Fuel, Limited Use	--	--	--	--	--
	Gaseous Fuel	--	--	--	--	--

For solid fuel-fired boilers or process heaters, sources may choose one of two emission limit options: (1) existing and new affected units may choose to limit PM emissions to the level listed in Table 1 of this preamble,

or (2) existing and new affected units may choose to limit total selected metals emissions to the level listed in Table 1 of this preamble. Sources meeting the emission limits must also meet operating limits.

We have provided several compliance alternatives in the final rule. Sources may choose to demonstrate compliance based on the fuel pollutant content. Sources are also allowed to demonstrate compliance for existing large solid fuel units using emissions averaging.

F. What are the testing and initial compliance requirements?

As the owner or operator of a new or existing boiler or process heater, you must conduct performance tests (i.e. stack testing) or an initial fuel analysis to demonstrate compliance with any applicable emission limits. The applicable emission limits and, therefore, the required performance tests and fuel analysis are different depending on the subcategory classification of the unit. Existing units in the small solid fuel subcategory and existing units in any of the liquid or gaseous fuel subcategories do not have applicable emission limits and, therefore, are not required to conduct stack tests or fuel analyses. Other units are required to conduct the following compliance tests or fuel analyses where applicable:

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(1) Conduct initial and annual stack tests to determine compliance with the PM emission limits using EPA Method 5 or Method 17 in appendix A to part 60 of this chapter.

(2) Affected sources in the solid fuel subcategories may choose to comply with an alternative total selected metals emission limit instead of PM. Sources would conduct initial and annual stack tests to determine compliance with the total selected metals emission limit using EPA Method 29 in appendix A to part 60 of this chapter.

(3) Conduct initial and annual stack tests to determine compliance with the mercury emission limits using EPA Method 29 in appendix A to part 60 of this chapter or the ASTM D6784-02.

(4) Conduct initial and annual stack tests to determine compliance with the HCl emission limits using EPA Method 26 in appendix A to part 60 of this chapter (for boilers without wet scrubbers) or EPA Method 26A in appendix A to part 60 of this chapter (for boilers with wet scrubbers).

(5) For new boilers and process heaters in any of the limited use subcategories and new boilers and process heaters in any of the large subcategories with heat input capacities greater than 10 MMBtu/hr but less than 100

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MMBtu/hr, conduct initial and annual stack tests to determine compliance with the CO work practice limit using EPA Method 10, 10A, or 10B in appendix A to part 60 of this chapter.

(6) Use EPA Method 19 in appendix A to part 60 of this chapter to convert measured concentration values to pound per million British thermal units (Btu) values.

(7) For new units in any of the liquid fuel subcategories that do not burn residual oil, instead of conducting an initial and annual compliance test you may submit a signed statement in the Notification of Compliance Status report that indicates that you only burn liquid fossil fuels other than residual oil.

(8) For affected sources that choose to meet the emission limits based on fuel analysis, conduct the fuel analysis using method ASTM D5865-01ael or ASTM E711-87 to determine heat content; ASTM D3684-01 (for coal), SW-846-7471A (for solid samples) or SW-846-7470A (for liquid samples) to determine mercury levels; SW-846-6010B or ASTM D3683-94 (for coal) or ASTM E885-88 (for biomass) to determine total selected metals concentration; SW-846-9250 or ASTM E776-87 (for biomass) to determine chlorine concentration; and ASTM D3173 or ASTM E871 to determine moisture content.

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As part of the initial compliance demonstration, you must monitor specified operating parameters during the initial performance tests that demonstrate compliance with the PM (or metals), mercury, and HCl emission limits. You must calculate the average parameter values measured during each test run over the 3-run performance test. The minimum or maximum of the three average values (depending on the parameter measured) for each applicable parameter establishes the site-specific operating limit. The applicable operating parameters for which operating limits must be established are based on the emissions limits applicable to your unit as well as the types of add-on controls on the unit. A summary of the operating limits that must be established for the various types of controls are as follows:

(1) For boilers and process heaters without wet scrubbers that must comply with the mercury emission limit and either a PM emission limit or a total selected metals emission limit, you must meet an opacity limit of 20 percent for existing sources (based on 6-minute averages), except for one 6-minute period per hour of not more than 27 percent, or 10 percent for new sources (based on 1-hour block averages). Or, if the unit is controlled with a fabric filter, instead of meeting an opacity operating

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limit, you may elect to operate the fabric filter using a bag leak detection system such that corrective actions are initiated within 1 hour of a bag leak detection system alarm and you operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month reporting period. If you can demonstrate compliance with the PM, mercury, or metals limits but cannot demonstrate compliance with the opacity operating limit, then you can establish a site-specific maximum opacity operating limit using data from a continuous opacity monitoring system and calculated from the average opacity for each individual test run.

(2) For boilers and process heaters without wet or dry scrubbers that must comply with an HCl emission limit, you must determine the average chloride content level in the input fuel(s) during the HCl performance test. This is your maximum chloride input operating limit.

(3) For boilers and process heaters with wet scrubbers that must comply with a mercury, PM (or total selected metals) and/or an HCl emission limit, you must measure pressure drop and liquid flow rate of the scrubber during the performance test and calculate the average value for each test run. The minimum test run average establishes your site-specific pressure drop and liquid flow rate

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operating levels. If different average parameter levels are measured during the mercury, PM (or metals) and HCl tests, the highest of the minimum test run average values establishes your site-specific operating limit. If you are complying with an HCl emission limit, you must measure pH during the performance test for HCl and determine the average for each test run and the minimum value for the performance test. This establishes your minimum pH operating limit.

(4) For boilers and process heaters with dry scrubbers that must comply with an HCl emission limit, you must measure the sorbent injection rate during the performance test for mercury and HCl and calculate the average for each test run. The minimum test run average during the performance test establishes your site-specific minimum sorbent injection rate operating limit.

(5) For boilers and process heaters with fabric filters in combination with wet scrubbers that must comply with a mercury emission limit, PM (or total selected metals) emission limit and/or an HCl emission limit, you must measure the pH, pressure drop, and liquid flowrate of the wet scrubber during the performance test and calculate the average value for each test run. The minimum test run average establishes your site-specific pH, pressure drop,

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and liquid flowrate operating limits for the wet scrubber. Furthermore, the fabric filter must be operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during any 6-month period.

(6) For boilers and process heaters with electrostatic precipitators (ESP) in combination with wet scrubbers that must comply with a mercury, PM (or total selected metals) and/or an HCl emission limit, you must measure the pH, pressure drop, and liquid flow rate of the wet scrubber during the HCl performance test, and you must measure the voltage and secondary current of the ESP collection plates or total power input during the mercury and PM (or metals) performance test. Calculate the average value of these parameters for each test run. The minimum test run averages establish your site-specific minimum pH, pressure drop, and liquid flowrate operating limit for the wet scrubber and the minimum voltage and current operating limits for the ESP.

(7) For boilers and process heaters that choose to comply with the alternative total selected metals emission limit instead of PM, you must determine the total selected metals content of the inlet fuels that were burned during the total selected metals performance test. This value is your maximum fuel inlet metals content operating limit.

(8) For boilers and process heaters that burn a

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mixture of multiple fuels, you must determine the mercury content of the inlet fuels that were burned during the mercury performance test. This value is your maximum fuel inlet mercury operating limit. Units burning only a single fuel type (not including start-up fuels) do not need to determine, by fuel analysis, the fuel inlet operating limit when conducting performance tests.

(9) For new boilers and process heaters in any of the large subcategories and with heat input capacities greater or equal to 100 MMBtu/hr, you must monitor CO to demonstrate that average CO emissions, on a 30-day rolling average, are at or below an exhaust concentration of 400 parts per million (ppm) by volume on a dry basis corrected to 3 percent oxygen for units in the liquid subcategories and corrected to 7 percent for units in the solid subcategories. For new boilers and process heaters in any of the limited use subcategories or with heat input capacities less than 100 MMBtu/hr, you must conduct initial test of CO emissions to demonstrate compliance with the CO work practice limit.

The final rule also provides you another compliance alternative. You may demonstrate compliance by emissions averaging for existing large solid fuel boilers in States that choose to allow emissions averaging in their operating permit program.

G. What are the continuous compliance requirements?

To demonstrate continuous compliance with the emission limitations, you must monitor and comply with the applicable site-specific operating limits established during the performance tests or fuel analysis. Upon detecting an excursion or exceedance, you must restore operation of the unit to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance. Such actions may include initial inspections and evaluation, recording that operations returned to normal without operator action, or any necessary follow-up actions to return operation to below the work practice standard.

(1) For boilers and process heaters without wet scrubbers that must comply with a mercury emission limit and either a PM emission limit or a total selected metals emission limit, you must continuously monitor opacity and maintain the opacity at or below the maximum opacity operating limit for new and existing sources. Or, if the unit is controlled with a fabric filter, instead of

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continuous monitoring opacity, the fabric filter may be continuously operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during any 6-month period.

(2) For boilers and process heaters without wet or dry scrubbers that must comply with an HCl emission limit, you must maintain monthly records of fuel use that demonstrate that you have burned no new fuel types or new mixtures such that you have maintained the fuel HCl content level at or below your site-specific maximum HCl input operating limit. If you plan to burn a new fuel type or a new mixture than what was burned during the initial performance test, then you must re-calculate the maximum HCl input anticipated from the new fuels based on supplier data or your own fuel analysis. If the results of re-calculating the HCl input exceeds the average HCl content level established during the initial test, then you must conduct a new performance test to demonstrate continuous compliance with the HCl emission limit.

(3) For boilers and process heaters with wet scrubbers that must comply with a mercury, PM (or total selected metals) and/or an HCl emission limit, you must monitor pressure drop and liquid flow rate of the scrubber and maintain the 3-hour block averages at or above the operating

limits established during the performance test. You must monitor the pH of the scrubber and maintain the 3-hour block average at or above the operating limit established during the performance test to demonstrate continuous compliance with the HCl emission limits.

(4) For boilers and process heaters with dry scrubbers that must comply with a PM (or total selected metals) or mercury emission limit, and/or an HCl emission limit, you must continuously monitor the sorbent injection rate and maintain it at or above the operating limits established during the HCl performance test.

(5) For boilers and process heaters with fabric filters in combination with wet scrubbers, you must monitor the pH, pressure drop, and liquid flowrate of the wet scrubber and maintain the levels at or above the operating limits established during the HCl performance test. You must also maintain the operation of the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during any 6-month period.

(6) For boilers and process heaters with ESP in combination with wet scrubbers that must comply with a mercury, PM and/or an HCl emission limit, you must monitor the pH, pressure drop, and liquid flow rate of the wet

scrubber and maintain the 3-hour block averages at or above the operating limits established during the HCl performance test. Also, you must monitor the voltage and secondary current of the ESP collection plates or total power input and maintain the 3-hour block averages at or above the operating limits established during the mercury or PM (or metals) performance test.

(7) For boilers and process heaters that choose to comply with the alternative total selected metals limit instead of PM emission limit, you must maintain monthly fuel records that demonstrate that you burned no new fuel type or new mixtures such that the total selected metals content of the inlet fuel was maintained at or below your maximum fuel inlet metals content operating limit set during the metals performance test. If you plan to burn a new fuel type or new mixture, then you must re-calculate the maximum metals input anticipated from the new fuels based on supplier data or own fuel analysis. If the results of re-calculating the metals input exceeds the average metals content level established during the initial test, then you must conduct a new performance test to demonstrate continuous compliance with the alternate selected metals emission limit.

(8) For boilers and process heaters that must comply with the mercury emission limit, you must maintain monthly

fuel records that demonstrate that you burned no new fuel type or new mixture such that the total selected mercury content of the inlet fuel was maintained at or below your maximum fuel inlet metals content operating limit set during the mercury performance test. If you plan to burn a new fuel type or new mixture than what was burned during the initial performance test, then you must re-calculate the maximum mercury input anticipated from the new fuels based on supplier data or own fuel analysis. If the results of re-calculating the mercury input exceeds the average mercury content level established during the initial test, then you must conduct a new performance test to demonstrate continuous compliance with the mercury emission limit.

(9) For boilers and process heaters that choose to comply with any emission limit based on fuel analysis, you must maintain monthly fuel records to demonstrate that the content of fuel is maintained below the appropriate applicable emission limit.

(10) For new boilers and process heaters in any of the large subcategories with heat input capacities greater or equal to 100 MMBtu/hr, you must continuously monitor CO and maintain the 30-day rolling average CO emissions at or below 400 ppm by volume on a dry basis (corrected to 3 percent oxygen for units in the liquid or gaseous subcategories, and

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7 percent for units in the solid fuel subcategories) to demonstrate compliance with the work practice standards at all times except during startup, shutdown, and malfunction and when the unit is operating less than 50 percent of the rated capacity.

If a control device other than the ones specified in this section is used to comply with the final rule, you must establish site-specific operating limits and establish appropriate continuous monitoring requirements, as approved by the EPA Administrator.

If you choose to comply using emissions averaging, you must demonstrate on a monthly basis that mercury, metals, PM, and HCl emission limits can be met over a 12-month period.

H. <u>What are the notification, recordkeeping and reporting requirements</u>?

If your boiler or process heater is in the existing large gaseous fuel subcategory, or existing limited use gaseous fuel subcategory, or existing large liquid fuel subcategory, or existing limited use liquid fuel subcategory, or a new small liquid fuel unit that only burn gaseous fuels or distillate oil, you only have to submit the initial notification report. If your boiler or process heater is in the existing small gaseous, liquid, or solid

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fuel subcategories or new small gaseous fuel subcategory, you are not required to keep any records or submit any reports.

If your boiler or process heater is in any other subcategory, then you must keep the following records:

(1) All reports and notifications submitted to comply with the final rule.

(2) Continuous monitoring data as required in the final rule.

(3) Each instance in which you did not meet each emission limit work practice and operating limit, including periods of startup, shutdown, and malfunction (i.e., deviations from the final rule).

(4) Monthly hours of operation by each source that is in a limited use subcategory.

(5) Monthly fuel use by each boilers and process heaters subject to an emission limit including a description of the type(s) of fuel(s) burned, amount of each fuel type burned, and units of measure

(6) Calculations and supporting information of chloride fuel input, as required in the final rule.

(7) Calculations and supporting information of total selected metals and mercury fuel input, as required in the final rule, if applicable.

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(8) A copy of the results of all performance tests, fuel analysis, opacity observations, performance evaluations, or other compliance demonstrations conducted to demonstrate initial or continuous compliance with the final rule.

(9) A copy of any federally enforceable permit that limits the annual capacity factor of the source to less than or equal to 10 percent.

(10) A copy of your site-specific startup, shutdown, and malfunction plan.

(11) A copy of your site-specific monitoring plan developed for the final rule, if applicable.

(12) A copy of your site-specific fuel analysis plan developed for the final rule, if applicable.

(13) A copy of the emissions averaging plan, if applicable.

You must submit the following reports and notifications:

(1) Notifications required by the General Provisions.

(2) Initial Notification no later than 120 calendar days after you become subject to the final rule.

(3) Notification of Intent to conduct performance tests and/or compliance demonstration at least 30 calendar days before the performance test and/or compliance

demonstration is scheduled.

(4) Notification of Compliance Status 60 calendar days following completion of the performance test and/or compliance demonstration.

(5) Notification of intent to demonstrate compliance by emissions averaging.

(6) Notification of intent to demonstrate eligibility for either health-based compliance alternative.

(7) Compliance reports semi-annually.

I. <u>What are the health-based compliance alternatives, and how do I demonstrate eligibility?</u>

<u>HCl Compliance Alternative</u>

As an alternative to the requirement for each large solid fuel-fired boiler to demonstrate compliance with the HCl emission limit in the final rule, you may demonstrate compliance with a health-based HCl equivalent allowable emission limit.

The procedures for demonstrating eligibility for the HCl compliance alternative (as outlined in appendix A of the final rule) are:

(1) You must include in your demonstration every emission point covered under the final rule.

(2) You must conduct HCl and chlorine emissions tests for every emission point covered under the final rule.

(3) You must determine the total maximum hourly mass HCl-equivalent emission rate for your affected source by summing the maximum hourly emission rates of HCl and chlorine for each of the affected units at your facility covered under the final rule.

(4) Use the look-up table in the appendix A of the final rule to determine if your facility is in compliance with the health-based HCl-equivalent emission limit.

(5) Select the maximum allowable HCl-equivalent emission rate from the look-up table in appendix A of the final rule for your affected source using the average stack height of your emission units covered under the final rule as your stack height and the minimum distance between any affected emission point and the property boundary as your property boundary.

(6) Your facility is in compliance if your maximum HCl-equivalent emission rate does not exceed the value specified in the look-up table in appendix A of the final rule.

(7) As an alternative to using the look-up table, you may conduct a site-specific compliance demonstration (as outlined in appendix A of the final rule) which demonstrates that the subpart DDDDD units at your facility are not expected to cause an individual chronic inhalation exposure

from HCl and chlorine which can exceed a Hazard Index (HI) value of 1.0.

Total Selected Metals Compliance Alternative

In lieu of complying with the emission standard for total selected metals (TSM) in the final rule based on the sum of emissions for the eight selected metals, you may demonstrate eligibility for complying with the TSM standard based on excluding manganese emissions from the summation of TSM emissions for the affected source unit(s).

The procedures for demonstrating eligibility for the TSM compliance alternative (as outlined in appendix A of the final rule) are:

(1) You must include in your demonstration every emission point covered under the final rule that emits manganese.

(2) You must conduct manganese emissions tests for every emission point covered under the final rule that emits manganese.

(3) You must determine the total maximum hourly manganese emission rate from your affected source by summing the maximum hourly manganese emission rates for each of the affected units at your facility covered under the final rule.

(4) Use the look-up table in appendix A of the final

rule to determine if your facility is eligible for complying with the alternative TSM limit based on the sum of emissions for seven metals (excluding manganese) for the affected source units.

(5) Select the maximum allowable manganese emission rate from the look-up table in appendix A of the final rule for your affected source using the average stack height of your emission units covered under the final rule as your stack height and the minimum distance between any of those emission points and the property boundary as your property boundary.

(6) Your facility is eligible if your maximum manganese emission rate does not exceed the value specified in the look-up table in appendix A of the final rule.

(7) As an alternative to using look-up table to determine if your facility is eligible for the TSM compliance alternative, you may conduct a site-specific compliance demonstration (as outlined in appendix A of the final rule) which demonstrates that the subpart DDDDD units at your facility are not expected to cause an individual chronic inhalation exposure from manganese which can exceed a Hazard Quotient (HQ) value of 1.0.

If you elect to demonstrate eligibility for either of the health-based compliance alternatives, you must submit

certified documentation supporting compliance with the procedures at least 1 year before the compliance date.

You must submit supporting documentation including documentation of all maximum capacities, existing control devices used to reduce emissions, stack parameters, and property boundary distances to each affected source of HCl-equivalent and/or manganese emissions.

You must keep records of the information used in developing the eligibility demonstration for your affected source.

To be eligible for either health-based compliance alternative, the parameters that defined your affected source as eligible for the health-based compliance alternatives (including, but not limited to, fuel type, type of control devices, process parameters reflecting the emission rates used for your eligibility demonstration) must be incorporated as Federally enforceable limits into your title V permit. If you do not meet these criteria, then your affected source is subject to the applicable emission limits, operating limits, and work practice standards in the final rule.

If you intend to change key parameters (including distance of stack to the property boundary) that may result in lower allowable health-based emission limits, you must

recalculate the limits under the provisions of this section, and submit documentation supporting the revised limits prior to initiating the change to the key parameter.

If you intend to install a new solid fuel-fired boiler or process heater or change any existing emissions controls that may result in increasing HCl-equivalent and/or manganese emissions, you must recalculate the total maximum hourly HCl-equivalent and/or manganese emission rate from your affected source, and submit certified documentation supporting continued eligibility under the revised information prior to initiating the new installation or change to the emissions controls.

III. What are the significant changes since proposal?

A. Definition of Affected Source

The definition of affected source in §63.7490 has been revised to be: (1) the collection of all existing industrial, commercial, or institutional boilers or process heaters within a subcategory located at a major source; and/or (2) each new or reconstructed industrial, commercial, or institutional boiler or process heater located at a major source.

B. Sources Not Covered by the NESHAP

The applicability section of the final rule (§63.7490(c)) has been written to clarify that the following

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are not subject to the final rule: blast furnace stoves, any boiler or process heater specifically listed as an affected source in another MACT standard, temporary boilers, and blast furnace gas fuel-fired boilers and process heaters.

C. Emission Limits

The emission limit for mercury in the existing large solid fuel subcategories has been written as 0.000009 lb/MMBtu (from 0.000007 lb/MMBtu at proposal).

D. Definitions Added and Revised

The EPA has written the definitions of large, limited use, and small gaseous subcategories to include gaseous fuel-fired boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply emergencies.

The final rule also includes a definition of fuel type which is used in the fuel analysis compliance options. Fuel type means each category of fuels that share a common name of classification. Examples include, but are not limited to: bituminous coal, subbituminous coal, lignite, anthracite, biomass, construction/demolition material, salt water laden wood, creosote treated wood, tires, and residual oil. Individual fuel types received from different suppliers are not considered new fuel types except for construction/demolition material.

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Construction/demolition material means waste building material that result from the construction or demolition operations on houses and commercial and industrial buildings.

Unadulterated wood, component of biomass, means wood or wood products that have not been painted, pigment-stained, or pressure treated with compounds such as chromate copper arsenate, pentachlorophenol, and creosote. Plywood, particle board, oriented strand board, and other types of wood products bound by glues and resins are included in this definition.

We have included a definition for temporary boiler to mean any gaseous or liquid fuel-fired boiler that is designed, and is capable of, being carried or moved from one location to another. A temporary boiler that remains at a location for more than 180 consecutive days is no longer considered to be a temporary boiler. Any temporary boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period.

The final rule also contains a definition written for waste heat boiler that identifies waste heat boilers incorporating duct or supplemental burners that are designed to supply 50 percent or more of the total rated heat input

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capacity of the waste heat boiler as not being waste heat boilers, but are considered boilers and subject to the final rule.

E. Requirements for Sources in Subcategories Without Emission Limits or Work Practice Requirements

In the final rule, we have clarified that sources in the existing large and limited use gaseous fuel subcategories, existing large and limited use liquid fuel subcategories, new small gaseous fuel subcategory and new small liquid fuel subcategory are only subject to the initial notification requirements in §63.9(b) of subpart A of this part and are not required to submit as startup, shutdown, and malfunction (SSM) plan as part of their initial notification. We have written the final rule to state that sources in the existing small gaseous fuel, liquid fuel, and solid fuel subcategories are not subject to any requirements in the final rule or of subpart A of this part.

F. Carbon Monoxide Work Practice Emission Levels and Requirements

The final rule provides revisions to the CO work practice emission levels. For new sources in the solid fuel subcategory, the work practice standard has been written to be corrected to 7 percent oxygen rather than 3 percent.

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Units in the gaseous and liquid fuel subcategories still have to correct to 3 percent oxygen.

The final rule also allows sources with heat input capacities greater than 10 MMBtu/hr but less that 100 MMBtu/hr to conduct initial and annual compliance tests to demonstrate compliance with the CO limit. Sources greater than 100 MMBtu/hr must still demonstrate compliance using CO continuous emission monitors (CEMS).

The final rule also does not allow you to calculate data average using data recorded during periods where your boiler or process heater is operating at less than 50 percent of its rated capacity, monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. You must use all data collected during all other periods in assessing compliance.

G. Fuel Analysis Option

We have clarified the fuel analysis options in the final rule. You are not required to conduct performance tests for hydrogen chloride, mercury, or total selected metals if you demonstrate compliance with the hydrogen chloride, mercury, or total selected metals limits based on the fuel pollutant content. Your operating limit is then the emission limit of the applicable pollutant. You are not

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required to conduct emission tests.

If you demonstrate compliance with the HCl, mercury, or TSM limit by performance tests, then your operating limits are the operating limits of the control device (if used) and the fuel pollutant content of the fuel type/mixture burned. Units burning multiple fuel types are required to determine by fuel analysis, the fuel pollutant content of the fuel/mixture burned during the performance test.

The final rule specifies the testing and initial and continuous compliance requirements to be used when complying with the fuel analysis options. Fuel analysis tests for total chloride, gross calorific value, mercury, metal analysis, sample collection, and sample preparation are included in the final rule.

We have written the requirement to remove the need for conducting additional tests if you receive fuel from a new supplier. You are required to conduct another performance test, if you demonstrated compliance through performance testing, only when you burn a new fuel type or mixture and the results of recalculating the fuel pollutant content are higher than the level established during the initial performance test.

H. Emissions Averaging

We have included a compliance alternative in the final

rule to allow emissions averaging between existing large solid fuel boilers. Compliance must be demonstrated on a 12-month rolling average basis, determined at the end of every month. If you elect to comply with the emissions averaging compliance alternative, you must use equations provided in the final rule to demonstrate that particulate matter or TSM, HCl, or mercury from all applicable units do not exceed the emission limits specified in the final rule. If you use this option, you must also develop and submit an implementation plan no later than 6 months before the date that the facility intends to demonstrate compliance.

I. Opacity Limit

At proposal, we required sources meeting the PM and mercury limits to determine site-specific opacity operating limits based on levels during the initial performance test. To demonstrate continuous compliance with the opacity limit, the opacity operating limits have been established to be 20 percent (based on 6-minute averages) except for one 6-minute period per hour of not more than 27 percent for existing sources and 10 percent (based on 1-hour block averages) for new sources.

J. Operating Limit Determination

The final rule defines maximum and minimum operating parameters that must be met. For sources complying with the

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alternative opacity requirement of establishing opacity limits during the initial performance test, the maximum opacity operating limit is 110 percent of the highest test-run average opacity measured according to the final rule during the most recent performance test demonstrating compliance with the applicable emission limit. For sources meeting the standards using scrubbers or ESP, the minimum pressure drop, scrubber effluent pH, scrubber flow rate, sorbent flow rate, voltage or amperage means 90 percent of the lowest test run average pressure drop, scrubber effluent pH, scrubber flow rate, sorbent flow rate, voltage or amperage measured according to the most recent performance test demonstrating compliance with the applicable emission limits.

The final rule clarifies that operation above the established maximum or below the established minimum operating parameters constitute a deviation of established operating parameters.

K. Revision of Compliance Dates

In §63.7510, we have also written the date by which you have to complete a compliance demonstration to be 180 days after the compliance date instead of at the compliance date.

IV. What are the responses to significant comments?

We received 218 public comment letters on the proposed

rule. Complete summaries of all the comments and responses are found in the Response-to-Comments document (see SUPPLEMENTARY INFORMATION section).

A. Applicability

Comment: Many commenters requested that EPA exempt units that are not subject to emission limits or work practice requirements from monitoring, recordkeeping, and reporting requirements.

Response: Sources in subcategories that do not have any emission limitations and work practices are not required to keep records or reports other than the initial notification. This is appropriate because no reports other than the initial notification would apply to these units. The SSM plan is not necessary nor required for these units because §63.6(e)(3) of subpart A of this part requires an affected source to develop an SSM plan for control equipment used to comply with the relevant standard. The proposed rule was not intended to require monitoring, recordkeeping, and reporting (including startup, shutdown, and malfunction plans), other than the initial notification for sources not subject to an emission limit. We have clarified this decision in the final rule. We have also determined that existing small units and new small gaseous fuel units, which are not subject to emission limits or work practices in this

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standard, and which are also not subject to such requirements in any other Federal regulation, should also not have to provide an initial notification. These small sources are generally gas-fired and since they have minimal emissions, they are usually considered as insignificant emission units by State permitting agencies.

Comment: Several commenters requested that EPA specifically exclude portable/transportable units from the final rule. The commenters stated that facilities periodically use these units to supply or supplement other site steam supplies when there is a mechanical problem that takes a unit out of service or during planned outages. The commenters added that because they are used on a limited basis, portable units are not fully integrated with site control systems and most portable/transportable units are owned by a rental company and may not be operated by the facility owner/operator.

Response: We agree with the commenters that temporary/portable units are used only on a limited basis and are not integrated into a facility's control system. These units are gas or oil fired units. Units in the existing gaseous or liquid subcategories are not subject to emission limits or work practice standards. Consequently, we have decided that temporary/portable units are not

subject to the final rule. We have added a definition for temporary boiler to mean any gaseous or liquid fuel-fired boiler that is designed, and is capable of, being carried or moved from one location to another. A temporary boiler that remains at a location for more than 180 consecutive days is no longer considered to be a temporary boiler. Any temporary boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period. We chose the 180-day time frame because that is the length of time a new source has after startup to conduct the initial performance test.

Comment: Several commenters requested EPA provide a lower size cut-off for the small unit subcategory. Several commenters argued that the benefits from requiring smaller units to install controls would be minimal given the overall monitoring, recordkeeping, and reporting burden. Several commenters also requested lower size cutoffs to make the final rule similar to others established by EPA (e.g, NSPS Nitrogen Oxide (NOx) SIP Call). Several commenters noted several recent court decisions in which the court has decided that a de minimis exemption is appropriate since the regulation of small sources would yield a gain of trivial or no value yet would impose significant regulatory burden. A

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wide range of lower size cutoffs were suggested. However, one commenter said that EPA should not develop de minimis exemptions. The commenter noted that de minimis exemptions do not spare EPA's resources for use on other purposes and are not justified by reductions in industry burden or inconvenience. The commenter noted that EPA did not establish any administrative record justifying the de minimis exemption.

Response: We have reviewed the commenters arguments and all the data provided in the comment letters. There is no justification for developing a lower size cut-off or de minimis level. We would also note the designation of large and small subcategories was not based solely on size of the unit. Large and small subcategories were developed because small units less than 10 MMBtu/hr heat input typically use a combustor design that is not common in larger units. Large boilers generally use the watertube combustor design. The design of the boiler or process heater will influence the completeness of the combustion process which will influence the formation of organic HAP emissions. Additionally, the vast majority of small units use natural gas as fuel. The EPA chose to develop large and small subcategories to account for these differences and their affect on the type of emissions. The cut-off between the large and small

subcategories of 10 MMBtu/hr was based on typical sizes for fire tube units, and also when considering cut-offs in State and Federal rules. Lastly, we would like to note that the final rule does not impose any requirements for existing units in any of the small subcategories.

Comment: Many commenters asked EPA to clarify which sources are not covered by the final rule.

Response: We have included an extensive list of sources that are not subject to the final rule. The final rule clarifies that boilers and process heaters that are included as part of the affected source in any other NESHAP are not subject to the NESHAP for industrial boilers and process heaters. However, we do not exclude boilers and process heaters that are used as control devices unless they are specifically considered part of any other NESHAP's definition of affected source. Incinerators, thermal oxidizers, and flares do not generally fall under the definition of a boiler or process heater and would not be subject to the final rule. The final rule excludes waste heat boilers and waste heat boilers with supplemental firing, as long as the supplemental firing does not provide more than 50 percent of the waste heat boiler's heat input. If your waste heat boiler does receive 50 percent of its total heat input from supplemental firing, it would be

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subject to the NESHAP for industrial boilers unless it is subject to any other NESHAP. We specifically exclude comfort heaters from the final rule. However, this exclusion does not include boilers used to make steam or heated water for comfort heat. If your boiler meets the definition of a hot water heater, then it would not be subject to the final rule. However, if the temperature, pressure, or capacity specifications of your boiler exceed the criteria specified for hot water heaters, then your boiler would be subject to the final rule. We recognize the unique properties of blast furnace gas having high CO concentrations and none to almost no organic compounds. Consequently, we agree that for these sources CO is not a surrogate for organic HAP emissions since CO is the primary component of blast furnace gas and virtually no organic HAP are generated in its combustion. As a result, we exclude from the final rule units that receive 90 percent or more of their total heat input from blast furnace gas. In addition, research and development (R&D) operations are not subject to the final rule. However, units that only provide steam to a process or for heating at a research and development facility are still subject to the final rule. This should address the commenters' concern over overlapping applicability.

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Comment: Several commenters suggested that EPA revise the proposed definition of affected source to be consistent with the definition of affected source in the General Provisions. The definition in the rule as proposed is much more narrow than that in the General Provisions, even though the General Provisions states that each standard will redefine affected source based on published justification as to why the definition would result in significant administration, practical or implementation problems. The commenters argued that EPA failed to provide justification for the proposed definition of affected source, which is narrower than the definition of affected source in the General Provisions.

Response: We agree with the commenters and in the final rule have incorporated the broader definition of affected source from the revised General Provisions. The General Provisions define the affected source as "the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a section 112(c) source category or subcategory . . . " Therefore, the definition of existing affected source in the final rule is the collection of existing industrial, commercial, or institutional boilers and process heaters within a subcategory located at a major source of HAP

emissions.

B. Format

Comment: Several commenters opposed using one or more surrogates for the HAP regulated. Some commenters stated that EPA must set emission standards for each HAP emitted by this category. One commenter explained that the use of surrogates is acceptable if: (1) the surrogates reflect the actual emissions of the represented pollutants, (2) the emission limit set for the surrogate is consistent with the emission limit calculated for the represented pollutants, and (3) the surrogates have substantially the same properties as the represented pollutants and is controlled by the same mechanism. Based on these criteria, the commenter argued that EPA's selection of surrogates is inadequate. One commenter specifically contended that CO is not an adequate surrogate for dioxin because dioxin emissions are affected by the temperature of the emissions, how quickly the temperature is lowered, and the levels of chlorine in the materials that are being combusted and control devices. Other commenters supported the use of surrogates to represent the HAP list.

Response: As discussed in the proposal preamble, the use of surrogates for the HAP regulated is appropriate. Because of the large number of HAP potentially present, the

disparity in the quality and quantity of the emissions information available, particularly for different fuel types, we chose to group HAP into four categories: mercury, non-mercury metallic HAP, inorganic HAP, and organic HAP. In general, the pollutants within each group have similar characteristics and can be controlled with the same techniques. We then chose compounds that could be used as surrogates for all the compounds in each pollutant category. We have used surrogates in previous NESHAP as a technique to reduce the performance testing costs, and thus the use of surrogates is appropriate in the final rule.

For inorganic HAP, we chose to use HCl as a surrogate. The emissions test information available to us indicated that the primary inorganic HAP emitted from boilers and process heaters is HCl. Much smaller amounts of hydrogen fluoride and chlorine are emitted. Control technologies that would reduce HCl would also control other inorganic HAP. Additionally, we had limited emissions information for other inorganic HAP. By focusing on HCl, we have achieved control of the largest emitted and most widely emitted HAP, and control of HCl would also constitute control of other inorganic HAP.

For non-mercury metallic HAP, we chose to use PM as a surrogate. Most, if not all, non-mercury metallic HAP

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emitted from combustion sources will appear on the flue gas fly-ash. Therefore, the same control technology that would be used to control fly-ash PM will control non-mercury metallic HAP. A review of data in the emission database for PM control devices having both inlet and outlet emissions results shows control efficiencies for each non-mercury metallic HAP similar to PM. Particulate matter was also chosen instead of a specific metallic HAP because all fuels do not emit the same type and amount of metallic HAP, but most generally emit PM that includes some amount and combination of metallic HAP. We maintain that particulate matter reflects the emissions of non-mercury metallic HAP as these compounds usually comprise a percentage of the emitted particulate matter. Since the NESHAP program is technology-based, the technologies that have been developed and implemented to control particulate matter, also control non-mercury metallic HAP. Furthermore, since non-mercury metallic HAP is a component of particulate matter, we can use particulate matter as a surrogate for the purposes of the final rule.

While we did use PM as a surrogate for non-mercury metallic HAP, we also provided an alternative total selected metals emission limit based on the sum of the emissions of the eight most common and largest emitted metallic HAP

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compounds from boilers and process heaters. Again, a total selected metals number was used instead of limits for each individual metallic HAP because sufficient information was not available for each metallic HAP for every fuel type. However, a total metals number could be calculated for every fuel type.

We realize that mercury emissions can exist in different forms depending on combustion conditions and concentrations of other compounds. That is why we have mercury as a separate pollutant category in the final rule and do not provide for a surrogate.

For organic HAP, we chose to use CO as a surrogate to represent the variety of organic compounds emitted from the various fuels burned. Both organic HAP and CO emissions are the result of incomplete combustion of the fuel. Because CO is a good indicator of incomplete combustion, there is a direct correlation between CO emissions and minimizing organic HAP emissions. The extent to which CO and HAP emissions are related can also depend on site-specific operating conditions for each boiler or process heater. This site-specific nature may result in various degrees of correlation between CO and organic HAP emissions, but it is proven that reductions in CO emissions result in a reduction of organic HAP emissions. The control methods for both CO

and organic HAP are the same, i.e., complete combustion. This result would not have been different if MACT floor analyses were conducted for specific organic HAP or for a surrogate compound such as CO. For boilers and process heaters, we have determined that CO is a reasonable indicator of incomplete combustion. Also, we did not set emission limits for each specific organic HAP because we lacked sufficient information for many of the organic HAP for all the fuels combusted. We acknowledge that there are many factors that affect the formation of dioxin, but we also recognize that dioxin can be formed in both the combustion unit and downstream in the associated PM control device. Minimizing organic HAP emissions can limit the formation of dioxin in the combustion unit. We reviewed all the good combustion practice (GCP) information available in the boiler population database and determined that no floor level of control exists, except for limiting CO emissions, such that GCP could be incorporated into the standard. One control technique, controlling inlet temperature to the PM control device, that has demonstrated controlling downstream formation of dioxins in other source categories (e.g., municipal waste combustors) was analyzed for industrial boilers. In all cases, no increase in dioxins emissions were indicated across the PM control device even at high

inlet temperatures. However, we requested comment on controls that would achieve reductions of organic HAP, including any additional data that might be available. The EPA did not receive any additional supporting information or data. Additionally, more stringent options beyond the floor level of control were evaluated, but were determined to be too costly and emissions reductions associated with the options could not be evaluated because no information was available that indicated a relationship between the GCP and emission reduction of organics (including dioxin).

C. Compliance Schedule

Comment: Many commenters requested that EPA provide an additional year to comply with the final rule. Commenters explained that the time lines associated with permitting, capital appropriation, project bid, and construction activities are significant and that the 3-year deadline would not provide adequate time for the estimated 3,730 existing units at affected sources to be retrofitted as necessary to meet the new MACT standards. The commenters added that sources subject to the final rule would also be competing with sources that are subject to other combustion rules for the same vendors.

Response: The EPA disagrees with the commenters that the 3-year compliance deadline is too short considering the

number of sources that will be competing for the resources and materials from engineering consultants, equipment vendors, construction contractors, financial institutions, and other critical suppliers. The EPA recognizes the possibility that these same consultants, vendors, etc., may also be used to comply with the utility MACT standard. However, we know that many sources will not need to install controls. As a result, since not everyone will need more than 3 years to actually install controls, the final rule does not allow an extra year for existing sources to comply with the final rule. Section 112(i)(3)(B) of the CAA allows EPA or the permit authority, on a case-by-case basis, to grant an extension permitting an existing source up to 1 additional year to comply with standards if such additional period is necessary for the installation of controls. This provision is sufficient for those sources where the 3-year deadline would not provide adequate time to retrofit as necessary to comply with the requirements of the standard. We anticipate that a number of units will seek and be granted the 1-year extension since construction of needed control devices could be constrained by the potential impacts on delays in obtaining funding and potential labor and equipment shortages.

D. Subcategorization

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Comment: Two commenters said that EPA does not have the authority to develop subcategories for the purpose of reducing compliance costs or weakening the standard. The commenters also noted that costs should not be considered in subcategorizing and establishing the MACT floor. One commenter explained that EPA has failed to present a persuasive rationale for the establishment of new or different subcategories, such as a wood-fired unit subcategory and noted that EPA cannot subcategorize based on fuel type, cost, level of emissions reductions, control technology applicability or effectiveness, achievability of emissions reductions, or health risks. The commenter argued that EPA cannot subcategorize to reduce cost because that would change CAA section 112 standards into a cost-benefit program and that is not legally defensible. The commenter noted that the D.C. Circuit court recently held that, when confronted with the cost argument, costs are not relevant when determining MACT floors.

Response: If the commenters are referring to the request for comment regarding further subcategorizations than what was proposed, the EPA agrees that there is no justification for any further subcategories. The final rule maintains the subcategories presented in the proposed rule. If the commenters are referring to subcategories presented

in the proposed rule, section 112(d)(1) of the CAA states "the Administrator may distinguish among classes, types, and sizes of sources within a category or subcategory" in establishing emission standards. Thus, we have discretion in determining appropriate subcategories based on classes, types, and sizes of sources. We used this discretion in developing subcategories for the industrial, commercial, and institutional boilers and process heaters source category. Through subcategorization, we are able to define subsets of similar emission sources within a source category if differences in emissions characteristics, processes, air pollution control device (APCD) viability, or opportunities for pollution prevention exist within the source category. We first subcategorized boilers and process heaters based on the physical state of the fuel (solid, liquid, or gaseous), which will affect the type of pollutants emitted and controls applicable, and the design and operation of the boiler, which influences the formation of organic HAP emissions. We then further subcategorized boilers and process heaters based on size. Our distinctions are based on technological differences in the equipment. For example, small units are package units typically having capacities less than 10 million Btu per hour heat input and use a combustor design which is not common in large units. A

review of the information gathered on boilers also shows that a number of units operate as backup, emergency, or peaking units that operate infrequently. The boiler database indicates that these infrequently operated units typically operate 10 percent of the year or less. These limited use boilers, when called upon to operate, must respond without failure and without lengthy periods of startup. Since their use and operation are different compared to typical industrial, commercial, and institutional boilers, we decided that such limited use units should have their own subcategory.

Neither the subcategories or MACT floor analysis was conducted considering costs, either in the proposed rule or in the final rule.

Comment: Many commenters requested EPA to develop a separate subcategory for small municipal electric utilities. Reasons for creating a subcategory for small electrical utility steam generating units included: (1) EPA has authority to establish such a subcategory of sources to be regulated under CAA section 112 and is meant to address control costs and feasibility, (2) past EPA practice supports subcategorization in this instance, (3) differences between municipal utility boilers and non-utility boilers justify subcategorization, and (4) EPA cannot properly

account for cost and energy concerns mandated in the MACT standard setting process without subcategorization for municipal utility boilers. The commenters added that the unique physical attributes of municipally-owned utilities, as well as their significant and direct impact on municipal tax base, support a separate subcategorization.

Response: The EPA sees no technical or legal justification for creating a separate subcategory for municipal utilities. Boilers at municipal utilities fire the same type of fuels, have the same type of combustor designs, and can use the same type of controls as other units in the large subcategory. Consequently, the subcategories that are in the final rule are the same as at proposal. We would also like to clarify that subcategories were developed based on combustor design and not on industrial sector. Also, had we gone beyond-the-floor, we would have considered cost in the final determination. Since we did not go beyond-the-floor level of control, cost did not play a role in the analysis.

Comment: Many commenters requested EPA add a subcategory for medium sized boilers and process heaters.

Response: The EPA does not see justification for creating a separate subcategory for medium sized units. The designation of large and small subcategories was not based

solely on size of the unit. Large and small subcategories were developed because small units less than 10 MMBtu/hr heat input typically use a combustor design that is not common in larger units. Large boilers generally use the watertube combustor design. The design of the boiler or process heater will influence the completeness of the combustion process which will influence the formation of organic HAP emissions. The EPA developed large and small subcategories to account for these differences and their affect on the type of emissions. The proposed size break between the large and small subcategories of 10 MMBtu/hr was based on typical sizes for firetube and cast iron units and considering cut-offs in State and Federal permitting requirements and rules. The EPA does not view medium sized boilers as being different than larger boilers. Combustor designs, applicable air pollution control devices, fuels used, and operation are similar for large and medium. While actual pollution controls used and monitoring equipment may be different, the CAA does not allow EPA to subcategorize on these parameters.

Section 112(d)(1) of the CAA allows EPA to distinguish among classes, types, and size in establishing MACT standards. As indicated above, at proposal, the size break selected between large and small units of 10 MMBtu/hr was

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based on typical sizes for fire tube units and also considering cut-offs in State and Federal permitting requirements and emission rules. Based on comments, we have examined information in the docket regarding the population and characteristics of industrial, commercial, and institutional boilers. It is correct that boilers below 10 MMBtu/hr are generally not required to be permitted and are either firetube or cast iron boilers. Based on review of the thousands of responses received on an information collection request (ICR) conducted during the rulemaking process, it is obvious and appropriate that the distinction between small and large units needs to include size. It is apparent from the ICR responses that facilities know the size of their units but do not generally know the exact type of the units. Many responses indicated that the boiler was both firetube and watertube. Many more responses did not list the boiler type at all. Therefore, the inclusion of size in the definition of small and large subcategories is appropriate.

Based on review of the 1979 EPA document on boiler population and the ICR survey database, the appropriate size break between small and large type units is 10 MMBtu/hr. In the EPA document, 99 percent of the boilers listed as being below 10 MMbtu/hr are either firetube or cast iron. Since

these trends are from a 25 year old report, we analyzed our ICR survey database which confirmed these findings.

E. MACT Floor

Comment: Several commenters supported EPA's finding that the MACT floor level for existing gas and liquid fuel-fired units is no emissions reductions. Other commenters contended that EPA has legal authority to set the MACT floor as "no emissions control" for particular HAP categories. A commenter noted that EPA has a clear statutory obligation to set emission standards for each listed HAP. One commenter specifically challenged EPA's determination that "no control" is the MACT floor for organic pollutants. The commenter noted that the U.S. Court of Appeals for the D.C. Circuit had squarely held, in the National Lime case, that EPA was not allowed to make a "no control" determination for a pollutant emitted by a listed category of sources.

Response: First, the MACT floor methodology we use is consistent with D.C. Circuit's holding in the National Lime case. The D.C. Circuit held that by focusing only on technology EPA ignored the directive in CAA section 112(d)(2) to consider pollution-reducing measures including process changes and substitution of materials.

The EPA has ample legal authority to set the MACT floor at "no emissions reductions." This is because the statute

requires EPA to set standards that are duplicable by others. In the National Lime case, the court threw out EPA's determination of a no control floor because it was based only on a control technology approach. The court stated that EPA must look at what the best performers achieve, regardless of how they achieve it. Therefore, our determination that the MACT floor for certain subcategories or HAP is "no emissions reductions" is lawful because we determined that the best-performing sources were not achieving emissions reductions through the use of an emission control system and there were no other appropriate methods by which boilers and process heaters could reduce HAP emissions. Furthermore, setting emissions standards on the basis of actual emissions data alone where facilities have no way of controlling their HAP emissions would contravene the plain statutory language as well as Congressional intent that affected sources not be forced to shut down.

The EPA agrees with the commenter that all factors which might control HAP emissions must be considered in making a floor determination for each subcategory. However, EPA disagrees that it must express the floor as a quantitative emission level in those instances where the source on which the floor determination is based has not

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adopted or implemented any measure that would reduce emissions.

A detailed discussion of the MACT floor methodology is presented in the memorandum "MACT Floor Analysis for New and Existing Sources in the Industrial, Commercial, and Institutional Boilers and Process Heaters Source Categories" in the docket. In summary, we considered several approaches to identifying MACT floor for existing industrial, commercial, and institutional boilers and process heaters. Based on recent court decisions, in most cases the most acceptable approach for determining the MACT floor is likely to involve primarily the consideration of available emissions test data. However, after review of the available HAP emission test data, we determined that it was inappropriate to use this MACT floor approach to establish emission limits for boilers and process heaters. The main problem with using only the HAP emissions data is that, based on the test data alone, uncontrolled units (or units with low efficiency add-on controls) were frequently identified as being among the best performing 12 percent of sources in a subcategory, while many units with high efficiency controls were not. However, these uncontrolled or poorly controlled units are not truly among the best controlled units in the category. Rather, the emissions

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from these units are relatively low because of particular characteristics of the fuel that they burn, that can not reasonably be replicated by other units in the category or subcategory. A review of fuel analyses indicate that the concentration of HAP (metals, HCl, mercury) vary greatly, not only between fuel types, but also within each fuel type. Therefore, a unit without any add-on controls, but burning a fuel containing lower amounts of HAP, can have emission levels that are lower than the emissions from a unit with the best available add-on controls. If only the available HAP emissions data are used, the resulting MACT floor levels would, in most cases, be unachievable for many, if not most, existing units, even those that employ the most effective available emission control technology. Another problem with using only emissions data is that there is very limited or no HAP emissions information available to the Agency for the subcategories. This is consistent with the fact that units in these source categories have not historically been required to test for HAP emissions.

We also considered using HAP emission limits contained in State regulations and permits as a surrogate for actual emission data in order to identify the emissions levels from the best performing units in the category for purposes of establishing MACT standards. However, we found no State

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regulations or State permits which specifically limit HAP emissions from these sources.

Consequently, we concluded that the most appropriate approach for determining MACT floors for boilers and process heaters is to look at the control options used by the units within each subcategory in order to identify the best performing units. Information was available regarding the emission control options employed by the population of boilers identified by the EPA. We considered several possible control techniques (i.e., factors that influence emissions), including fuel substitution, process changes and work practices, and add-on control technologies.

We first considered whether fuel switching would be an appropriate control option for sources in each subcategory. We considered the feasibility of both fuel switching to other fuels used in the subcategory and to fuels from other subcategories. This consideration included determining whether switching fuels would achieve lower HAP emissions. A second consideration was whether fuel switching could be technically achieved by boilers and process heaters in the subcategory considering the existing design of boilers and process heaters. We also considered the availability of various types of fuel. After considering these factors, we determined that fuel switching was not an appropriate

control technology for purposes of determining the MACT floor level of control for any subcategory. This decision was based on the overall effect of fuel switching on HAP emissions, technical and design considerations, and concerns about fuel availability.

We also concluded that process changes or work practices were not appropriate criteria for identifying the MACT floor level of control for units in the boilers and process heaters category. The HAP emissions from boilers and process heaters are either fuel dependent (i.e., mercury, metals, and inorganic HAP) or combustion related (i.e., organic HAP). Fuel dependent HAP are typically controlled by removing them from the flue gas after combustion. Therefore, they are not affected by the operation of the boiler or process heater. Consequently, process changes would be ineffective in reducing these fuel-related HAP emissions.

On the other hand, organic HAP can be formed from incomplete combustion of the fuel. Good combustion practice (GCP), in terms of boilers and process heaters, could be defined as the system design and work practices expected to minimize organic HAP emissions. While few sources in EPA's database specifically reported using good combustion practices, the data that we have suggests that boilers and

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process heaters within each subcategory might use any of a wide variety of different work practices, depending on the characteristics of the individual unit. The lack of information, and lack of a uniform approach to assuring combustion efficiency, is not surprising given the extreme diversity of boilers and process heaters, and given the fact that no applicable Federal standards, and most applicable State standards, do not include work practice requirements for boilers and process heaters. Even those States that do have such requirements do not require the same work practices. For example, CO emissions are generally a good indicator of incomplete combustion, and, therefore, low CO emissions might reflect good combustion practices. (As discussed in the proposal, CO is considered a surrogate for organic HAP emissions.) Therefore, we considered whether existing CO emission limits might be used to establish good combustion practice standards for boilers and process heaters. We reviewed State regulations applicable to boilers and process heaters, and then for each subcategory we matched the applicability of State CO emission limits with information on the locations and characteristics of the boilers and process heaters in the population database. Ultimately, we found that very few units (less than 6 percent) in any subcategory were subject to CO emission

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limits. We concluded that this information did not allow EPA to identify a level of performance that was representative of good combustion across the various units in any subcategory. Therefore, we did not establish a CO emission limit, as a surrogate for organic HAP emissions, as a part of the MACT floor for existing units. However, we have considered the appropriateness of such requirements in the context of evaluation possible beyond-the-floor options.

In general, boilers and process heaters are designed for good combustion. Facilities have an economic incentive to ensure that fuel is not wasted, and the combustion device operates properly and is appropriately maintained. In fact, existing boilers and process heaters are used typically as high efficiency control devices to control (reduce) emission streams containing organic HAP compounds from various process operations. Therefore, EPA's inability to establish a combustion practice requirement as part of the MACT floor for existing sources in this category should not reduce the incentive for owners and operators to run their boilers and process heaters at top efficiency.

As a result of the evaluation of the feasibility of establishing emission limits based on control techniques such as fuel switching and good combustion practices, we concluded that add-on control technology should be the

primary factor for purposes of identifying the best controlled units within each subcategory of boilers and process heaters. We identified the types of air pollution control techniques currently used. We ranked those controls according to their effectiveness in removing the different HAP categories of pollutants; including metallic HAP and PM, inorganic HAP such as acid gases, mercury, and organic HAP. We then listed all the boilers and process heaters in the population database in order of decreasing control device effectiveness within each subcategory for each pollutant type. Then we identified the top 12 percent of units within each category based on this ranking, and determined what kind of emission control technology, or combination of technologies, the units in the top 12 percent employed. Finally, we looked at the emissions test data from boilers and process heaters that used the same control technology, or technologies, as the units in the top 12 percent to estimate the average emissions limitation achieved by the these units.

This approach reasonably ensures that the emission limit selected as the MACT floor adequately represents the average level of control actually achieved by units in the top 12 percent. The analysis of the measured emissions from units representative of the top 12 percent is reasonably

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designed to provide a meaningful estimate of the average performance, or central tendency, of the best controlled 12 percent of units in a given subcategory. For existing subcategories where less than 12 percent of units in the subcategory use any type of control technology, we looked to see if we could estimate the central tendency of the best controlled units by looking at the unit occupying the median point in the top 12 percent (the unit at the 94th percentile). If the median unit of the top 12 percent is using some control technology, we might use the measured emission performance of that individual unit as the basis for estimating an appropriate average level of control of the top 12 percent. For subcategories were less than 6 percent of the units in a HAP grouping used controls or limited emissions, the median unit for that HAP grouping reflects no emissions reductions. Therefore, in these circumstances, EPA has appropriately established the MACT floor emission levels for these sources as no emission reduction.

Comment: Many commenters opposed EPA using emissions data from units in the large subcategory to develop emission limits for units in the small or limited use subcategories. Some commenters stated that it was not appropriate to assume that emissions rates achievable by large units are

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achievable by small units, even the best controlled units. Other commenters argued that the use of large unit data in MACT determinations for other subcategories would defeat the purpose of the subcategorization and violate the requirements of CAA section 112 because the use of this data does not represent sources in the relevant category or subcategory.

Response: The EPA disagrees with the commenters and maintains that it has conducted the MACT floor analysis appropriately. Section 112(d) of the CAA requires us to establish emission limits for new sources based on the performance of the best-controlled similar source. The CAA does not specify that the similar source must be within the same source category or subcategory. To the contrary, our interpretation of section 112(d) is that we are obligated to consider similar sources from other source categories or subcategories in determining the best-controlled similar source for establishing MACT for new sources.

For new limited use and small units, we concluded that the best-controlled similar sources are found in the large subcategory. First, EPA determined the control technology used by the best controlled sources in the subcategory. For example, only units in the population database less than 10 MMBtu/hr (and not in the limited use subcategory) were used

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to determine the MACT floor control technology for units in the small subcategories. Second, EPA used information in the emissions test database to establish the emission level associated with the MACT floor control technology. The emissions test database did not contain test data for limited use or small boilers and process heaters. Section 112(d) of the CAA requires EPA to use information from similar sources to set the MACT floor. Such sources may not be in the same subcategory. Although the units in the small and limited use subcategories are different enough to warrant their own subcategory (i.e., different purposes and operation), emissions of the specific types of HAP for which limits are being proposed are expected to be related more to the type of fuel burned and the type of control used, than to unit operation. Consequently, EPA determined that emissions information from large fuel-fired units could be used to establish MACT floor levels for the small and limited use subcategories because the fuels and controls are similar. The proposal preamble requested additional information from commenters to refine/revise the approach if necessary. No commenters provided emissions information for limited use or small subcategory boilers or process heaters.

Comment: Several commenters requested that EPA account for variability in fuel composition as MACT floors are

established and to provide adequate allowances for inherent fuel supply variability. Some commenters argued that there is no flexibility in the rule to account for this variability and noted that coal composition can vary by location and also within an individual seam.

Response: As described in the memorandum "Revised MACT Floor Analysis for the Industrial, Commercial, and Institutional Boilers and Process Heater National Emission Standards for Hazardous Air Pollutants Based on Public Comments" in the docket, the calculation of numerical emission limits was a two-step analysis. The first step involved calculating a numerical average of the appropriate subset of emission test data. The second step involved generating and applying an appropriate variability factor to account for unavoidable variations in emissions due to uncontrollable variations in fuel characteristics and ordinary operational variability. Accounting for variability is appropriate in order to generate a more accurate estimation of the actual, long term, performance of a source (e.g., the source occupying the median point in the top 12 percent). An emission test provides a momentary snapshot, not an estimation of continuous performance. In order to translate the former into the latter, we must account for that ordinary and unavoidable variability that

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the source is like to experience over time. This give us a more reasonable estimate of the actual level of emissions control that the unit is achieving. The EPA contends that by considering the variability of emissions information, we have indirectly incorporated variability in fuel, operating conditions, and sampling and analytical conditions because these parameters vary from emission tests conducted from one unit to another, and even within each test set of three measurements at a single unit. The most elementary measure of variation is range. Range is defined as the difference between the largest and smallest values. This is the variability methodology used in the proposed rule. That is, for each unit with multiple emissions tests conducted over time, the variability was calculated by dividing the highest three-run test result by the lowest three-run test result. The overall variability was calculated by averaging all the individual unit variability factors. This overall variability factor was multiplied by the overall average emission level to derive a MACT floor limit representative of the average emission limitation achieved by the top 12 percent of units. This approach adequately accounts for inherent fuel supply variability. Based on comments, EPA did conduct a more robust statistical analysis (*t*-test) of the mercury emissions data used in the MACT floor analysis

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to identify the 97.5th percent confidence limit. This analysis provided similar results to the variability analysis conducted in the proposed rule. Consequently, EPA decided not to change its variability methodology. A detailed discussion of the statistical analysis conducted is provided in the memorandum "Statistical Analysis of Mercury Test Data Variability in Response to Public Comments on Determination of the MACT Floor for Mercury Emissions" in the docket.

Comment: Several commenters supported EPA's finding that the MACT floor level of control for existing gaseous and liquid fuel units is no control. Other commenters noted that EPA has a clear statutory obligation to set emission standards for each listed HAP (the commenter cited legal briefs). One commenter specifically challenged EPA's determination of the MACT floor for organic pollutants. The commenter explained that EPA should rank the units for which emissions data is available according to the best performing units, not based on the add-on control level of 6 percent of the total population. The commenter noted that the U.S. Court of Appeals for the D.C. Circuit had squarely held, in the National Lime case, that EPA was not allowed to make a "no control" determination for a pollutant emitted by a listed category of sources.

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Response: The EPA agrees that all factors which might control HAP emissions must be considered in making a floor determination for each subcategory. However, EPA disagrees that it must express the floor as a quantitative emission level in those instances where the sources on which the floor determination is based has not adopted or implemented any measure that would reduce emissions. For several subcategories and certain HAP, EPA has not identified any adjustments or other operational modifications that would materially reduce emissions by these units, and EPA had determined that no add-on controls are presently in use. In these circumstances, EPA has established appropriately the MACT floors for these sources as no emission reduction.

Comment: One commenter pointed out that the variability factor used to make the calculated MACT floor less stringent is not allowed by section 112 of the CAA. The commenter mentioned that the variability factors are not consistent, as one factor considers the fuel variability and the other factor considers the test data variability.

Response: Section 112(d)(2) of the CAA requires that emissions standards promulgated shall require the maximum degree of reductions in emissions that the EPA Administrator, taking into consideration the costs of achieving such emission reduction, determines is achievable

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for new and existing sources in the subcategory to which such emission standards applies. Accounting for variability is appropriate in order to generate a more accurate estimation of the actual, long term, performance of a source (e.g., the source occupying the median point in the top 12 percent). An emission test provides a momentary snapshot, not an estimation of continuous performance. In order to translate the former into the latter, we must account for that ordinary and unavoidable variability that the source is like to experience over time. This give us a more reasonable estimate of the actual level of emissions control that the unit is achieving. As such, due to variations in fuel burned, and ordinary operational variability any emission limit set from a point source measurement alone may not be indicative of normal emissions or operations of the unit. Attempting to base a standard (either a floor standard, or a beyond-the-floor standard) solely on point measurements would lead to unachievable standards for all sources. Limits set by EPA must be achieved at all times, and it is important that the MACT floor limit adequately account for the normal and unavoidable variability in the process and in the operation of the control device.

Variability was assessed two ways. For existing subcategories, variability in emissions information was used

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to develop variability factors for all subcategories where emissions information was available. Variability in fuel content was used only in situations regarding determining the achievable MACT floor level for new sources from the emission test result on the best controlled similar source. This approach is appropriate since the main uncertainty associated with the emission test result from the best controlled similar source is fuel variability. Corresponding fuel analysis results were not available for the emissions test results from the best controlled similar source. Whereas, the average emission level of the best 12 percent of the units has, besides fuel variability, the uncertainty associated with operational and design variability of the various control devices installed on units that represent the best 12 percent of the units. For example, available fuel analysis information shows that mercury content of coal varies by a factor of 12.54. Dividing the highest mercury emission test result by the lowest mercury test results from coal-fired units included in units that represent the best 12 percent results in a variability factor of 20. Therefore, we concluded that fuel availability was inherently considered in the MACT floor analysis approach used for existing subcategories.

Comment: Many commenters requested that EPA revise the

MACT floor methodology for mercury emission limits. The commenters contended that the variability factor was calculated inappropriately. Other commenters stated that EPA should account for variability in fuel composition in the MACT floor analysis. Other commenters expressed concern that the floor level of control was based on fabric filters, which has not been proven at all sources to reduce mercury.

Response: As discussed in the proposal preamble, the MACT floor analysis for mercury was based on a two step process. First the percentage of units with control technologies that could achieve mercury emissions reductions was determined using the boiler population databases. If the control technology analysis indicated that at least 12 percent of sources in the subcategory used a control device that could achieve mercury emissions reductions, then the control technology present at the median (6th percentile) was identified as the MACT floor control technology. The MACT floor level of control for mercury was identified as a fabric filter. The control effectiveness of fabric filters was based on emissions information for utility boilers that indicated that mercury emissions reductions were being achieved with this technology. In this case, we could use control efficiency information from another similar source category to supplement the information available in this

source category because of the similarity in fuel burned, combustor type, and control methodology and operation. We maintain that fabric filters are still the appropriate level of control for the MACT floor.

Second, the emission limit associated with the MACT floor control technology was calculated using emissions information for units in the subcategory, whenever possible. For most of the subcategories developed, emissions information was adequate. Only for the emission limit for new source liquids and the variability factor for new source solids was fuel pollutant content incorporated into the MACT floor analyses. The mercury fuel content of coal from the utility industry was used in developing the variability factors for new solid fired units. This was done because mercury emissions are dependent on the quantity of mercury in the fuel burned. Coal available to utilities and industrial boilers and process heaters is expected to be similar, and coal is the solid fuel that is routinely used in such units that has generally the greatest degree of HAP variability. We maintain that the utility database used at proposal to develop the variability factor for new sources was adequate in establishing the MACT floor emission limit.

The EPA recognizes that the mercury emissions database for industrial boilers is limited. However, EPA is directed

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by the CAA to develop standards for sources using whatever data is available. Prior to proposal and during the Industrial Combustion Coordinated Rulemaking (ICCR) process, EPA conducted a thorough search for HAP emission test reports. This search was supported by industry, trade groups, and States. For criteria pollutants, such as PM, substantial emission information was available and gathered. For mercury and other HAP, this was not the case. Industrial boilers have not generally been required to test for HAP emissions. In the proposed rule, EPA requested commenters to provide additional emissions information. However, only one source provided any additional mercury emissions data. This information (test results from three additional coal-fired industrial boilers) was used to revise the mercury emission limit for existing sources. We also reviewed the mercury emission database used to develop the MACT floor emission limit for existing sources. After review, we determined that a revision to the variability factor was appropriate. The additional data and the revised variability factor was used to re-calculate the mercury emission limit to be 0.000009 lb/MMBtu (from 0.000007 lb/MMBtu at proposal). A detailed discussion of the revised MACT floor analysis conducted is provided in the memorandum "Revised MACT Floor Analysis for the Industrial, Commercial,

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and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants Based on Public Comments" in the docket.

Variability of the emissions data were incorporated into the final emission limits. The EPA contends that by considering the variability of emissions information, we have indirectly incorporated variability in fuel, operating conditions, and sampling and analytical conditions because these parameters vary from emission tests conducted from one unit to another, and even within one unit. The EPA does not consider it appropriate or feasible to incorporate variability from a multitude of parameters because such information is not available and cannot be correlated to the emissions information in the emissions test database. For the final rule, EPA did conduct a statistical analysis of the data to identify the 97.5th percent confidence interval. This analysis provided similar results to the variability analysis conducted in the proposed rule. Consequently, EPA decided not to change its variability methodology. A detailed discussion of the statistical analysis conducted is provided in the memorandum "Statistical Analysis of Mercury Test Data Variability in Response to Public Comments on Determination of the MACT Floor for Mercury Emissions" in the docket.

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Comment: Several commenters contended that the California standards which the CO requirements are based on do not require CO CEMS, but require initial compliance testing and periodic subsequent performance testing.

Response: The commenters are correct that the California CO regulations do not require CO CEMS. The regulations do provide sources with the option of conducting annual testing or installing CO CEMS to demonstrate compliance with the CO emission limit. Because the regulations that were the basis of the MACT floor do not provide specifics on which boilers should conduct annual testing and which should use CO CEMS, we reviewed the cost information provided by the commenters to make this determination. In considering the additional cost information and reviewing the cost information used in the proposed rule, the EPA decided that changes to the CO compliance requirements were warranted. The final rule requires that new units with heat input capacities less than 100 MMBtu/hr conduct initial and annual performance tests for CO emissions. New units with heat input capacities greater or equal to 100 MMBtu/hr are still required to install, operate, and maintain a CO CEMS.

Regardless of whether the California regulations do or do not require CO CEMS, we would have reviewed the need for

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continuous monitoring and operating limits in order to ensure the most accurate indication of proper operation of the control system. The purpose of all of the minimum operating parameter limits in the standard is to ensure continuous compliance by ensuring that the air pollution control equipment is operating as they were during the latest performance test demonstrating compliance with the emission limits. The operating parameters are established as "minimum" to provide enforceable boundaries in their operation. Operating outside the bounds of the minimum parameters may lead to increased air emissions.

The EPA would also like to clarify that operation above the CO limit constitutes a deviation of the work practice standard. However, the determination of what deviations constitute violations of the standard is up to the discretion of the entity responsible for enforcement of the standards.

F. Beyond the MACT Floor

Comment: Many commenters contended that carbon injection should have been required as a beyond-the-floor option. Other commenters supported EPA's decision to not require any controls beyond-the-floor.

Response: For the final rule, EPA maintains that options beyond the MACT floor are not appropriate for the

standard. The EPA is required by the CAA to set the standard at a minimum on the best controlled 12 percent of sources (for existing units) or best controlled similar source (for new units). The CAA also requires EPA to consider costs and non-air quality impacts and energy requirements when considering more stringent requirements than the MACT floor. As documented in the memorandum "Methodology for Estimating Costs and Emissions Impacts for Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants" in the docket, EPA did consider the cost and emission impacts of a variety of regulatory options more stringent than the MACT floor for each subcategory. The EPA recognizes that for some subcategories, more stringent controls than the MACT floor can be applied and achieve additional emissions reductions. However, EPA also determined that the cost impacts of such controls were very high. Considering both the costs and emissions reductions, EPA determined that it would be infeasible to require any options more stringent than the floor level.

For the final rule, EPA maintains that carbon injection should not be required as an above the floor technology. As discussed in the proposal preamble, we identified one existing industrial boiler that was using carbon injection.

The emissions data that we obtained from the boiler indicated that this carbon injection unit was not achieving mercury emissions reductions. This result led us to conclude that it was not the new source floor level of control. However, there may have been other reasons for the ineffectiveness of this system (e.g., low inlet mercury levels, insufficient carbon injection rate, ESP instead of fabric filter for PM control). Therefore, we considered carbon injection as a beyond-the-floor option, but decided that while this control technique has been used in other source categories, there is no demonstrated evidence that it would work for industrial boilers and process heaters because the type of mercury emitted and properties of the emission streams are sufficiently different for boilers and process heaters and other source categories.

G. Work Practice Requirements

Comment: Many commenters requested EPA consider exceedences of the CO limit to be a trigger for corrective action rather than a violation.

Response: In the final rule, we have clarified that an exceedence of the CO limit constitutes a deviation of the work practice standard. An observed exceedence of a monitoring parameter is not an automatic violation. You are required to report any deviation from an applicable emission

limitation (including operating limit). We will review the information in your report along with other available information to determine if the deviation constitutes a violation. The determination of what emission or operating limit deviation constitutes violations of the standard is up to the discretion of the entity responsible for enforcement of the standard.

H. Compliance

Comment: Many commenters requested that EPA simplify and write the fuel monitoring requirements to not require retesting of fuel for changes in fuel supplier.

Response: We agree that the fuel monitoring requirements in the proposal needed to be clarified and explained further. Therefore, we have clarified the fuel analysis options in the final rule. If you elect to demonstrate compliance with the HCl, mercury, or total selected metals limit by using fuel which has a statistically lower pollutant content than the emission limit, then your operating limit is the emission limit of the applicable pollutant. Under this option, you are not required to conduct performance tests (i.e. stack tests).

If you demonstrate compliance with the HCl, mercury, or total selected metals limit by using fuel with a statistically higher pollutant content than the applicable

emission limit, but performance tests demonstrate that you can meet the emission limits, then your operating limits are the operating limits of the control device (if used) and the fuel pollutant content of the fuel type/mixture burned.

The final rule specifies the testing methodology and procedures and the initial and continuous compliance requirements to be used when complying with the fuel analysis options. Fuel analysis tests for total chloride, gross calorific value, mercury, metal analysis, sample collection, and sample preparation are included in the final rule.

If you elect to comply based on fuel analysis, you are required to statistically analyze, using the z-test, the data to determine the 90th percentile confidence level. It is the 90th percentile confidence level that is required to be used to determine compliance with the applicable emission limit. The statistical approach is required to assist in ensuring continuous compliance by statistically accounting for the inherent variability in the fuel type.

You are required to recalculate the fuel pollutant content only if you burn a new fuel type or fuel mixture. You are required to conduct another performance test if you demonstrate compliance through performance testing, you burn a new fuel type or mixture, and the results of recalculating

the fuel pollutant content are higher than the level established during the initial performance test

Comment: Many commenters requested EPA consider exceedences of parametric limits to be a trigger for corrective action rather than a violation.

Response: In the final rule, we have clarified than an exceedence of the parametric limits constitute a deviation of the operating limits. An observed exceedence of a monitoring parameter is not an automatic violation. You are required to report any deviation from an applicable emission limitation (including operating limit). We will review the information in your report along with other available information to determine if the deviation constitutes a violation. The determination of what emission or operating limit deviation constitutes violations of the standard is up to the discretion of the entity responsible for enforcement of the standard.

Comment: Many commenters requested EPA revise the opacity requirements. Commenters objected to the provision in the proposed NESHAP that would establish an opacity "operating limit" based on the initial performance test. Some commenters contended that EPA has provided no data or references demonstrating a relationship between opacity and particulate, total metals, or mercury emissions. Other

commenters argued that the proposed opacity limit approach for dry control devices is unworkable due to the inherent inability of continuous opacity monitors (COMS) to accurately measure opacity at levels less than 10 percent. Some commenters argued that the performance and opacity achieved during the initial test may not be representative of the unit's performance. Other commenters explained that equipment condition, fuel and operating variations, and other uncontrollable parameters may result in varying emissions and emissions control equipment efficiencies over time. Commenters suggested requiring the NSPS limits for opacity rather than setting opacity based on the initial compliance test.

Response: We have reviewed the information provided by the commenters, and agree that the opacity operating limit requirements in the proposed rule are not appropriate for this source category. Because of the variability in fuels burned, the combination of fuels burned, and the typical operation of boilers and process heaters, we have decided that an opacity limit set based on the initial performance test may not be representative of the units typical performance.

We have revised the opacity operating limit provision by requiring existing units to maintain opacity to less than

or equal to 20 percent (based on 6-minute averages) except for one 6-minute period per hour of not more than 27 percent. This is the opacity limit contained in the current NSPS for industrial boilers, which has a similar PM emission limit as the final rule. Therefore, it was determined that it was appropriate to include a similar opacity level as the control device operating limit for existing units. New sources can maintain their opacity operating limit to less than or equal to 10 percent (based on 1-hour block averages). This level appears to be the lowest opacity level currently applicable to industrial boilers in State regulations.

Comment: Several commenters objected to the requirement to conduct performance testing at worst case conditions. The commenters found this requirement to be unrealistic because stack testing must be scheduled well in advance and worst-case conditions depend on fuel, load, and many other variables, making it impossible to assure that the testing will occur during worst-case conditions. Two commenters contended there can be no guarantee that mineral properties for a fuel source at the time of the baseline test can be guaranteed beyond the content identified during purchase contract negotiations with a fuel supplier. Two commenters suggested that EPA define what worst case

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conditions are because sources do not have the experience to determine worst-case representative process conditions.

Response: We agree that more direction and clarification is needed regarding testing at worst case conditions. We have modified fuel sampling requirements and performance testing fuel use requirements to simplify compliance. During performance testing, sources are required to burn the type of fuel or mixture of fuel types that have the highest concentration of regulated HAP. This, in combination with revised fuel sampling requirements (e.g., based on fuel type and not on supplier, etc), will simplify the determination of the fuel blend during the performance test. Sources are also required to conduct performance tests under representative full load operating conditions.

Comment: Several commenters objected to the requirement for annual performance tests because they felt that it is overly burdensome given the ongoing compliance demonstrations required by the NESHAP. Several commenters suggested that initial performance testing should be required with subsequent performance testing occurring every 3 to 5 years. Some commenters stated that 5-year test intervals are consistent with title V permits and have been allowed in other MACT standards (e.g. Hazardous Waste

Combustors).

Response: We have worked to minimize the testing and monitoring requirements of the final rule while retaining the ability to ensure compliance with the emission limits and work practice requirements. We are providing an option for sources to conduct performance testing once every 3 years if they conduct successful performance testing for 3 consecutive years. We are also allowing sources to demonstrate compliance with the HCl, mercury, and total selected metals emission limits through fuel testing if they do not need emission control devices to achieve the standard.

I. Emissions Averaging

In the proposal preamble, we solicited comments on an emissions averaging or bubbling compliance alternative, as part of the EPA's general policy of encouraging the use of flexible compliance approaches where they can be properly monitored and enforced, and whether EPA should include emissions averaging in the final rule. Emissions averaging can provide sources the flexibility to comply in the least costly manner while still maintaining regulation that is workable and enforceable. We requested comment on an averaging approach for determining compliance with the non-mercury metallic HAP, HCl, mercury, and/or PM standards for

existing sources. We indicated that averaging would allow owners and operators to submit non-mercury metals, mercury, HCl, and/or PM emissions limits to the EPA Administrator for approval for each existing boiler in the averaging group such that if these emission limits are met, the total emissions from all existing boilers in the averaging group are less than or equal to emission limits (for non-mercury metals, mercury, HCl, or PM) applicable to units in the particular subcategory. We indicated also that averaging would not be applicable to new sources and could only be used between boilers and process heaters in the same subcategory. Also, owners or operators of existing sources subject to the Industrial Boiler New Source Performance Standards NSPS (40 CFR part 60, subparts Db and Dc) would be required to continue to meet the PM emission standard of that NSPS regardless of whether or not they are averaging.

Emissions averaging has been incorporated into the final rule as an alternative means of complying with the final rule. Emissions averaging allows an individual affected unit emitting above the allowable emission limit required by the final rule to comply with that emission limit by averaging its emissions with other affected units at the same facility emitting below the allowable emission limit required by the final rule.

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Comment: Many commenters supported including averaging in the final rule. Commenters cited numerous reasons, including cost effectiveness, energy efficiency, greater flexibility in compliance, and greater environmental benefit. Commenters also cited 40 CFR part 63, subpart MM, Pulping Chemical Recovery Combustion MACT as a precedent for including emissions averaging in MACT standards. Two commenters disagreed with allowing emissions averaging, stating that it would complicate compliance determinations, does not fit within the CAA mandate, and is inconsistent with the purpose of CAA section 112. Many of those commenters who supported emissions averaging recommended additional flexibility, such as including new units, and bubbling across subcategories.

Response: The final rule includes an emissions averaging compliance alternative because emissions averaging represents an equivalent, more flexible, and less costly alternative to controlling certain emission points to MACT levels. We have concluded that a limited form of averaging could be implemented and not lessen the stringency of the standard. We agree with the commenters that some type of emissions averaging would provide flexibility in compliance, cost and energy savings to owners and operators. We also recognize that we must ensure that any emissions averaging

option can be implemented and enforced, will be clear to sources, and most importantly, will achieve no less emissions reductions than unit by unit implementation of the MACT requirements.

The final rule is not the first NESHAP to include provisions permitting emission averaging. In general, EPA has concluded that it is permissible to establish within a NESHAP a unified compliance regimen that permits averaging across affected units subject to the standard under certain conditions. Averaging across affected units is permitted only if it can be demonstrated that the total quantity of any particular HAP that may be emitted by that portion of a contiguous major source that is subject to the NESHAP will not be greater under the averaging mechanism than it would be if each individual affected unit complied separately with the applicable standard. Under this rigorous test, the practical outcome of averaging is equivalent in every respect to compliance by the discrete units, and the statutory policy embodied in the MACT floor provisions is, therefore, fully effectuated.

The EPA has generally imposed certain limits on the scope and nature of emissions averaging programs. These limits include: (1) no averaging between different types of pollutants, (2) no averaging between sources that are not

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part of the same major source, (3) no averaging between sources within the same major source that are not subject to the same NESHAP, and (4) no averaging between existing sources and new sources.

The final rule fully satisfies each of these criteria. Accordingly, EPA has concluded that the averaging of emissions across affected units permitted by the final rule is consistent with the CAA. In addition, EPA notes that the provision in the final rule that requires each facility that intends to utilize emission averaging to submit an emission averaging plan provides additional assurance that the necessary criteria will be followed. In this emission averaging plan, the facility must include the identification of (1) all units in the averaging group, (2) the control technology installed, (3) the process parameter that will be monitored, (4) the specific control technology or pollution prevention measure to be used, (5) the test plan for the measurement of particulate matter (or selected total metals), hydrogen chloride, or mercury emissions, and (6) the operating parameters to be monitored for each control device. Upon receipt, the regulatory authority will not approve an emission averaging plan containing averaging between emissions of different types of pollutants or between sources in different subcategories.

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The final rule excludes new affected sources from the emissions averaging provision. New sources have historically been held to a stricter standard than existing sources because it is most cost effective to integrate state-of-the-art controls into equipment design and to install the technology during construction of new sources. One reason we allow emissions averaging is to give existing sources flexibility to achieve compliance at diverse points with varying degrees of add-on control already in place in the most cost-effective and technically reasonable fashion. This concern does not apply to new sources which can be designed and constructed with compliance in mind.

Only existing large solid fuel units, as defined in the final rule, can be included in the emissions averaging compliance alternative. Of the nine subcategories established for existing sources, existing large solid fuel units is the only subcategory for which multiple HAP emissions limits apply. For the existing small solid fuel subcategory and the six existing gaseous and liquid fuel subcategories, no HAP emissions limits are included in the final rule and, thus, it would not be appropriate to allow these units to average emissions. As for the existing limited use solid fuel subcategory, since these units, as defined in the final rule, operated on a limited basis

(capacity factor of less than 10 percent) and are subject only to a less stringent PM emissions limit (as a surrogate for non-mercury metals), it would be inappropriate to allow these units to average emissions.

With concern about the equivalency of emissions reductions from averaging and non-averaging in mind, the EPA Administrator is also imposing under the emission averaging provision caps on the current emissions from each of the sources in the averaging group. The emissions for each unit in the averaging group would be capped at the emission level being achieved on the effective date of the final rule. These caps would ensure that emissions do not increase above the emission levels that sources currently are designed, operated, and maintained to achieve. In the absence of performance tests, in documenting these caps, these sources will documented the type, design, and operating specification of control devices installed on the effective date of the final rule to ensure that existing controls are not removed or lessen. By including this provision in the final rule, the EPA Administrator has taken yet another step to assist in ensuring that emission averaging results in environmental benefits equivalent or better over what would have happened without emission averaging.

The inclusion of emissions averaging into rules and the

decision on how to design an emission averaging approach for a particular source category must be evaluated for each source category.

J. Risk-based Approach

Comment: Multiple commenters supported EPA's incorporation of risk-based concepts into the MACT Program. One commenter stated that providing risk-based applicability criteria for sources whose HAP emissions do not pose a significant risk is appropriate. Several commenters stated that there is clear legal authority in the CAA to construct NESHAP based on risk, and such an approach is very appropriate in the case of the Industrial Boiler MACT. The commenter also noted that the regulatory framework exists within their State to implement such an approach. Several commenters added that risk-based alternatives will function as indirect emission limits that must be maintained by the facilities to assure that the criteria are met, and, thus, such alternatives for low-risk facilities are supportable by EPA's authority under section 112(d)(4) and 112(c)(9) of the CAA and EPA's inherent de minimis authority. Another commenter asserted that there are ways to structure the rule to focus on facilities that pose significant risks and avoid imposition of high costs on facilities that pose little risk. An appropriate approach would be to allow individual

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facilities to conduct a risk assessment to show that they pose insignificant risks to the public. However, one commenter stated that it is not appropriate for State and local programs to determine which facilities should be exempted from MACT. Several commenters supported a risk-based compliance alternative for HCl.

Response: The EPA has determined that it can establish applicable health-based emission standards for HCl and manganese for affected sources in this category pursuant to its authority under section 112(d)(4) of the CAA. As a result, EPA has included such standards in the final rule as alternative compliance requirements. Under this approach, affected sources can choose to comply with either the MACT-based emission limits or the health-based emission limits. Sources which choose to comply with the health-based emission limit(s) will remain subject to those limits, but will need to comply with testing, monitoring and reporting requirements commensurate with the compliance option they have chosen. Such health-based standards are consistent with both the commenters' support for an approach that minimizes the impact on low-risk facilities and EPA's statutory mandate under section 112.

Section 112(d)(4) of the CAA authorizes EPA to consider established health thresholds, with an ample margin of

safety, when promulgating emission standards under section 112. Hydrogen chloride and Mn are two pollutants for which health thresholds have been established. Issues concerning our legal authority to establish health-based emission standards under section 112(d)(4) are discussed in detail below.

We are not using CAA section 112(c)(9) for the final rule, and there is no delisting of categories or subcategories, as would be consistent with section 112(c)(9).

The criteria defining how affected sources demonstrate that they meet the threshold emissions levels for the health-based compliance alternative(s) is included in appendix A to the final rule. The criteria in appendix A to the final rule were developed for and apply only to the Boiler and process heater source category and are not applicable to other source categories. The final rule provides two ways that an affected source may demonstrate compliance with the health-based emission limits. The first option is through the use of lookup tables which allow facilities to determine, using a limited number of site-specific input parameters, whether emissions from boilers and process heaters might cause a hazard index (HI) limit for non-carcinogens to be exceeded. The second option is a

modeling approach which allows those facilities that do not match the site-specific input parameters on which the lookup tables are based to demonstrate compliance with the health-based emission limits by modeling using site-specific information.

The affected source will have to demonstrate that it meets the criteria established by today's final rule and then assume Federally enforceable limitations, as described in appendix A of the final rule, that ensure their specified HAP emissions do not subsequently increase to exceed levels reflected in their demonstrations.

Comment: Multiple commenters are opposed to the risk-based exemptions. Some noted that the proposal to include risk-based exemptions is critically flawed and opposes adoption of the risk-based exemptions.

One commenter stated that the inclusion of case-by-case risk-based exemptions into the first phase of the MACT program will negate the legislative mandate and jeopardize the effectiveness of the national air toxics program to adequately protect public health and the environment and to establish a level playing field. The commenter was very concerned that EPA referenced a fundamentally flawed interpretation of CAA section 112(d)(4) written by an industry (AF&PA) subject to regulation. Of particular

concern was AF&PA's unprecedented proposal to include "de minimis exemptions" and "cost" in the MACT standard process.

One commenter stated that the use of risk-based concepts to evade MACT applicability is contrary to the intent of the CAA and is based on a flawed interpretation of section 112(d)(4) of the CAA. The commenter added that the CAA requires a technology-based floor level of control and does not provide exclusions for risk or secondary impacts from applying the MACT floor.

One commenter stated that in separate rulemakings and lawsuits, EPA has adopted legal positions and policies that refute and contradict the very risk-based and cost-based approaches contained in the proposals. In these other arenas, the commenter contended that EPA has properly rejected risk assessment to alter the establishment of MACT standards. The EPA also has properly rejected cost in determining MACT floors and in denying a basis for avoiding the MACT floor.

Several commenters stated that the preamble discussion of the risk-based approaches is not sufficient to allow for complete public comment and, therefore, it would not be appropriate for EPA to go directly to a final rule (without reproposal) with any of the approaches outlined in the proposal.

Response: We are not identifying and deleting a subcategory of sources in this source category pursuant to the authority of CAA section 112(c)(9). Legal issues associated with the health-based provisions are addressed below and in the comment/response memorandum.

As discussed above, we are, however, including in the final rule alternative health-based emission standards for HCl and TSM based on our authority under CAA section 112(d)(4). Section 112(d)(4) authorizes EPA to consider health thresholds, with an ample margin of safety, in establishing emission standards. The analysis necessary to do this can generally be characterized as a risk analysis. Thus, we disagree with the commenter that we must wait for implementation of CAA section 112(f) before utilizing risk analysis.

Comment: Many commenters stated that the proposal to include risk-based exemptions is contrary to the 1990 CAA Amendments (CAAA) which calls for MACT standards based on technology rather than risk as a first step. They added that congress incorporated the residual risk program under CAA section 112(f) to follow the MACT standards (not to replace them). The commenters added that the need for the technology-based approach has been recently reinforced by the results of the National Air Toxics Assessment (NATA),

which indicates that exposure to air toxics is very high throughout the country in urban and remote areas. Several commenters added that risk-based approaches will be used separately to augment and improve technology-based standards that do not adequately provide protection to the public. One commenter added that they have been unable to substantiate the basis for EPA's support of the regulatory relief sought by industry through risk-based exemptions and that, in fact, the use of risk assessment at this stage of the MACT program is directly opposed to title III of the CAA.

Response: We disagree that inclusion of health-based compliance alternatives, in the form of emission standards based on the authority of section 112(d)(4) of the CAA, in the final rule is contrary to the 1990 CAAA. The final rule is a technology-based standard developed using the procedures dictated by section 112 of the CAA. The only difference between the final rule and other MACT is that we used our discretion under section 112(d)(4) to base appropriate parts of the final rule on established health thresholds, with an ample margin of safety. The final rule is particularly well-suited for a health-based compliance alternative, established pursuant to the criteria set forth in section 112(d)(4). In addition to the fact that there

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are established health thresholds for HCl and manganese, EPA has determined that many of the facilities in this source category do not emit these pollutants in amounts that pose a significant risk to the surrounding population. Those sources that can demonstrate that the emissions of acid gases and manganese meet the threshold emission levels will be in compliance with the MACT. The criteria are based on health-protective estimates of risk and the threshold emission levels will provide ample protection of human health and the environment.

Inclusion of health-based compliance alternatives in the final rule does not alter the MACT program. Rather, it merely represents EPA availing itself, in appropriate circumstances, of the authority Congress granted it in section 112(d)(4) of the CAA. We recognize that such provisions are only appropriate for certain HAP, and our decision-making process required source category-specific input from stakeholders.

Although the NATA modeling study may show measurable concentrations of toxic air pollution across the country, these data do not suggest that EPA should not establish health-based emission standards pursuant to its authority under CAA section 112(d)(4) when it determines that it is appropriate to do so. The alternative health-based emission

standards included in the final rule will ensure that affected sources which choose to comply with those standards do not emit HCl and/or manganese at levels that are harmful to public health.

Comment: Many commenters stated that the proposal to allow risk-based exemptions would divert back to the time-consuming NESHAP development process that existed prior to the CAAA of 1990. The commenters asserted that under this process, which began with a risk assessment step, only eight NESHAP were promulgated during a 20-year period. The commenters continued that if the proposed approaches are inserted into upcoming standards, the commenters fear the MACT program (which is already far behind schedule) would be further delayed. One commenter supported EPA efforts to determine alternative MACT setting methodologies but strongly recommended that these be pursued separately from the final rule. The commenter contended that this will provide for timely issuance of final RICE and Boiler/Process Heater MACT rules relative to the settlement deadline. Two commenters stated that delays could be exacerbated by litigation following legal challenges to the rules, and such delays would trigger the MACT hammer, which would unnecessarily burden the State and local agencies and the industries. The commenters concluded that further delay is

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unacceptable. The commenters did not want to be in a position of implementing the CAA section 112(j) program and urged EPA to not delay the issuance of any MACT standard. The commenters noted that according to a recently proposed EPA rule regarding section 112(j), the regulated community and State and local agencies would have to proceed with part 2 permit applications, followed by case-by-case MACT, if EPA misses the newly agreed-upon MACT deadlines by as little as 2 months. This would be time consuming, costly, and burdensome for both regulators and the regulated community.

Response: We disagree that allowing health-based compliance alternatives in the final rule will alter the MACT program or affect the schedule for promulgation of the remaining MACT standards. We do not anticipate any further delays in completing the remaining MACT standards. The setting of alternative health-based emission standards in the final rule affects only the final rule.

The approach taken in the final rule is particularly well-suited to acid gases and manganese, which are the only pollutants included in the health-based compliance alternatives. For many facilities, these pollutants are currently emitted in amounts that do not expose anyone in surrounding population to concentrations above the established health thresholds. As a result, emissions of

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HCl and/or manganese at these facilities do not pose a significant risk to the surrounding population. Only those Boiler facilities that demonstrate that their emissions are below the health-based emission standard(s), are eligible for the compliance alternatives.

Including health-based compliance alternatives for boiler sources does not mean that EPA will automatically provide such alternatives for other industries. Rather, as has been the case throughout the MACT rule development process, EPA will undertake in each individual rule to determine whether it is appropriate to exercise its discretion to use its authority under CAA section 112(d)(4) in developing applicable emission standards. Furthermore, EPA has no intentions of re-opening previously promulgated NESHAP in light of decisions made specific to the Boilers source category. The Boilers NESHAP is being promulgated by the February 2004 court-ordered deadline.

Comment: Many commenters stated that the risk-based proposal removes the level-playing field that would result from the proper implementation of technology-based MACT standards. The commenters added that establishing a baseline level of control is essential to prevent industry from moving to areas of the country that have the least stringent air toxics programs, which was one of the primary

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goals of developing a uniform national air toxics program under section 112 of the 1990 CAA amendments. The risk-based approaches would jeopardize future reductions of HAP in a uniform and consistent manner across the nation.

Response: Providing health-based compliance alternatives for sources that can meet them in the final rule will assure the application of a uniform set of requirements across the nation. The final rule and its criteria for demonstrating eligibility for the health-based compliance alternatives apply uniformly to boilers across the nation in the large solid fuel-fired subcategories. The final rule establishes a two baseline levels of emission reduction for HCl and manganese, one based on a traditional MACT analysis and the other based on EPA's evaluation of the health threat posed by emissions of these two pollutants. All Boiler facilities must meet one of these baseline levels, and all facilities with boilers in the applicable subcategories have the same opportunity to demonstrate that they can meet the alternative health-based emission standards. The criteria for qualifying to comply with the alternative health-based emission standards are not dependent on local air toxics programs. Therefore, concerns regarding facilities moving to areas of the country with less-stringent air toxics programs should be alleviated.

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Comment: Multiple commenters stated that section 112(d)(4) of the CAA provides EPA with authority to exclude sources that emit threshold pollutants from regulation. The commenters indicated that section 112(d)(4) allows for discretion in developing MACT standards for HAP with health thresholds. The commenters added that the use of section 112(d)(4) authority also is supported by CAA's legislative history, which emphasizes that Congress included section 112(d)(4) in the CAA to prevent unnecessary regulation of source categories.

One commenter pointed out that Congress does not differentiate between technology-based "emission standards" set under CAA section 112(d)(3) versus "health threshold" based "emission standards" set under CAA section 112(d)(4). Instead, the statute explicitly treats emission standards promulgated under section 112(d)(3) and 112(d)(4) as equivalent by not distinguishing between those emission standards under the residual risk provisions of CAA section 112(f). One commenter added that EPA is permitted to establish alternative standards as long as it ensures that ambient concentrations are less than the health thresholds plus a margin of safety and the emissions do not cause adverse environmental effects. Multiple commenters pointed out that EPA has exercised such authority and cited the

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NESHAP for Chemical Recovery Combustion Sources at Kraft, Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills. In addition, the commenters added that in that NESHAP, EPA identified circumstances in which they would decline to exercise 112(d)(4) authority–where significant or widespread environmental harm would occur as a result of emissions from the category and the estimated health thresholds are subject to substantial scientific uncertainty. The commenters concluded that EPA determined that these considerations were not relevant to emissions from the pulp and paper source category, and the commenters stated that the same is true for their source categories and that the same treatment is warranted for many facilities within the source categories. The commenters noted that facilities that cannot meet the risk criteria would remain subject to the MACT requirements.

One commenter added that the risk-based approaches are squarely in line with the plain meaning of section CAA 112(d)(4). The commenters cited the Senate report (Sen Rep. No. 228, 101st Congress, 1st Sess 175-6 (1990)) showed that Congress contemplated that sources within the same category or subcategory would be subject to varied regulatory requirements, depending on the risk they pose to public health. The commenters added that nothing in the statutory definition of "emission standard" suggests that the term is

limited to a requirement for the installation of control technology. The commenters added that the risk-based compliance alternatives would meet this requirement because they would apply to an entire source category or subcategory. The EPA could create a subcategory for low-risk sources and tailor an emission standard to this subcategory, or apply to all sources in the category a NESHAP containing multiple compliance options, one or more being risk-based.

Multiple commenters stated that the plain meaning of CAA section 112(d)(4) does not allow EPA to make MACT standards for individual sources. Two commenters noted that section 112(d)(4) states that "with respect to pollutants for which a health threshold has been established, the EPA Administrator may consider such threshold level, with ample margin of safety, when establishing emission standards under this subsection."

Several commenters contended that EPA has misinterpreted the provision in CAA section 112(d)(4) in that section 112(d)(4) does not state that EPA can use applicability thresholds "in lieu of" the CAA section 112(d)(3) MACT floor requirements. The commenter interpreted section 112(d)(4) to state that health based thresholds can be considered when establishing the degree of

the MACT floor requirements, but it should not be used to supplant the requirements established pursuant to section 112(d)(3).

Many commenters stated that the legislative history of CAA section 112(d)(4) clearly rejects EPA's proposed facility-by-facility MACT exemptions. The commenters noted that Congress considered and rejected the applicability cutoffs upon which EPA now solicits comment. The commenters noted that the House version of the 1990 Amendments allowed States to issue permits that exempted a source from compliance with MACT rules if the source presented sufficient evidence to demonstrate negligible risk, and the Senate version of the 1990 Amendments contained no such provision. In conference, Congress considered both the House and Senate versions and rejected the House bill's exemption for specific facilities in favor of the Senate bill's language.

Response: The EPA has properly exercised the authority granted to it pursuant to CAA section 112(d)(4) of the CAA in establishing health-based emission standards for HCl and manganese which are applicable to the large solid fuel-fired subcategory. Section 112(d)(4) authorizes it to by-pass the mandate in section 112(d)(3) in appropriate circumstances. Those circumstances are present in the large solid fuel-

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fired Boiler subcategories.

Section 112(d)(4) of the CAA provides EPA with authority, at its discretion, to develop health-based emission standards for HAP "for which a health threshold has been established," provided that the standard reflects the health threshold "with an ample margin of safety." (The full text of the section 112(d)(4): "[with respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold level, within an ample margin of safety, when establishing emission standards under this subsection.")

Both the plain language of CAA section 112(d)(4) and the legislative history cited above indicate that EPA has the discretion under section 112(d)(4) to develop health-based standards for some source categories emitting threshold pollutants, and that those standards may be less stringent than the corresponding "floor"-based MACT standard would be. The EPA's use of such standards is not limited to situations where every source in the category or subcategory can comply with them. As is the case with technology-based standards, a particular source's ability to comply with a health-based standard will depend on its individual circumstances, as will what it must do to achieve compliance.

In developing health-based emission standards under CAA section 112(d)(4), EPA seeks to assure that those standards ensure that the concentration of the particular HAP to which an individual exposed at the upper end of the exposure distribution is exposed does not exceed the health threshold. The upper end of the exposure distribution is calculated using the "high end exposure estimate," defined as "a plausible estimate of individual exposure for those persons at the upper end of the exposure distribution, conceptually above the 90th percentile, but not higher than the individual in the population who has the highest exposure" (EPA Exposure Assessment Guidelines, 57 FR 22888, May 29, 1992). Assuring protection to persons at the upper end of the exposure distribution is consistent with the "ample margin of safety" requirement in section 112(d)(4).

We agree that section 112(d)(4) is appropriate for establishing emission standards for HCl and manganese applicable to the large solid fuel-fired subcategories, and, therefore, we have established such standards as an alternate compliance requirement for affected sources in those subcategories. Affected sources in the large solid fuel-fired subcategories which believe that they can demonstrate compliance with one or both of the health-based emission standards may choose to comply with those standards

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in lieu of the otherwise applicable MACT-based standard.

For purposes of the final rule, we are not considering background HAP emissions in developing the section CAA 112(d)(4) compliance alternatives. As we indicated in the Residual Risk Report to Congress, however, the Agency intends to consider facility-wide HAP emissions in future CAA section 112(f) residual risk actions.

Comment: Many commenters contended that the proposal will place a very intensive resource demand on State and local agencies to review source's risk assessments, and State/local agencies may not have expertise in risk assessment methodology or the resources needed to verify information (e.g., emissions data and stack parameters) submitted with each risk assessment.

Other commenters stated that a risk-based program can be structured and implemented in a manner that does not adversely impact limited State resources. One commenter asserted that EPA should work closely with States and industry to implement the risk-based approach in a non-burdensome manner. Another commenter stated that the risk-based approaches, like other MACT standards, would simply be incorporated into each State's existing title V program. The commenter concluded that because the title V framework already exists, the addition of a risk-based MACT

standard would not require States to overhaul existing permitting programs. Another commenter contended that the final MACT rule itself should set forth the applicability criteria - including the threshold levels of exposure - that sources must meet to qualify for a risk-based determination. Each source would have the burden of demonstrating that its exposures are below this limit and, therefore, the States would not be required to develop their own risk assessment guidance or to conduct source-specific risk assessments.

Response: The health-based emission limits for HCl and TSM which EPA has adopted in the final rule should not impose significant resource burdens on States. Further, the required compliance demonstration methodology is structured in such a way as to avoid the need for States to have significant expertise in risk assessment methodology. We have considered the commenters' concerns in developing the criteria defining eligibility for these compliance alternatives, and the approach that is included in the final rule provides clear, flexible requirements and enforceable compliance parameters. The final rule provides two ways that a facility may demonstrate eligibility for complying with the alternative health-based emission standard. First, look-up tables, which are included as Tables 2 (HCl) and 3 (manganese) in appendix A of the final rule, allow

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facilities to determine, using a limited number of site-specific input parameters, whether emissions from their sources might cause a hazard index limit (hazard quotient in the case of manganese) to be exceeded. If a facility cannot demonstrate eligibility using a look-up table, a modeling approach can be followed. Appendix A to the final rule presents the criteria for performing this modeling.

Regarding commenters' concerns with looking for a threshold level for carcinogens, the compliance alternatives only apply to HCl and manganese, which are not currently expected to be carcinogens. Also, the concern expressed by a commenter about exempting a facility based on limited emission data if EPA established a subcategory listing low-risk sources is not relevant here, because we have not used CAA section 112(c)(9) authority to establish a low-risk subcategory for the Industrial/Commercial/Institutional Boilers and Process Heaters source category. With respect to guidance for performing site-specific modeling, all of the procedures for performing such modeling are available in peer-reviewed scientific literature and, therefore, no additional guidance needs to be developed.

Only a portion of the major facilities in the large solid fuel-fired boilers and process heaters subcategory will submit eligibility demonstrations for the compliance

alternatives. Of this portion of major sources, most will be able to demonstrate eligibility based on simple analyses (e.g., using the look-up tables provided in appendix A of the final rule). However, it is likely that some facilities will require more detailed modeling. The criteria for demonstrating eligibility for the compliance alternatives are clearly spelled out in the final rule. Because these requirements are clearly spelled out and because any standards or requirements created under CAA section 112 are considered applicable requirements under 40 CFR part 70, the compliance alternatives would be incorporated into title V programs, and States would not have to overhaul existing permitting programs.

Finally, with respect to the burden associated with ongoing assurance that facilities which opt to do so continue to comply with the health-based compliance alternatives, the burden to States will be minimal. In accordance with the provisions of title V of the CAA and part 70 of 40 CFR (collectively "title V"), the owner or operator of any affected source opting to comply with the health-based emission standards will be required to certify compliance with those standards on an annual basis. Additionally, before changing key parameters that may impact an affected source's ability to continue to meet one or both

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of the health-based emission standards, the affected source is required to evaluate its ability to continue to comply with the health-based emission standard(s) and submit documentation to the permitting authority supporting continued eligibility for the compliance alternative.

The promulgation of specific alternative health-based emission limits and a uniform methodology for demonstrating compliance with those alternatives alleviates any concern regarding the public process required in reviewing/approving the proposed approaches and making substantial changes to existing regulations. It also addresses concerns regarding the costs and resources associated with assuring adequate public participation in the process of reviewing site-specific risk analyses.

To ensure that affected sources which choose to comply with the alternative health-based emission standards continue to comply with those standards after the initial compliance demonstration, specified assessment parameters (e.g.,HCl and/or manganese emission rate, boiler heat output, etc.) must be included in their title V permit as enforceable requirements. Draft permits and permit applications must be made available to the public from the State or local agency responsible for issuing the permit, or in the case where EPA is issuing the permit, from the EPA

regional office. Members of the public may request that the State or local agency include them on their public notice mailing list, thus providing the public the opportunity to review the appropriateness of these requirements. Every proposed title V permit has a 30-day public comment period and a 45-day EPA review period. If EPA does not object to the permit, any member of the public may petition EPA to object to the permit within 60 days of the end of the EPA review period.

Comment: A commenter contended that exempting HCl emissions from control is inappropriate, particularly since EPA proposed HCl as a surrogate measure for all the inorganic HAP emitted by this source category. Hence, an exemption that excluded HCl emission points from control requirements would also exclude emissions of all the other inorganic HAP that would likely include hydrogen cyanide and hydrogen fluoride.

Response: Facilities attempting to utilize the health-based compliance alternative for HCl will not be required to evaluate emissions of other inorganic HAP except for chlorine. We conducted an assessment of boiler emissions and determined that, of the acid gas HAP controlled by scrubbing technology, chlorine is responsible for the great majority of risk and HCl is responsible for the next largest

portion of the total risk. The contributions of other HAP, including hydrogen fluoride, to the total risk were negligible. Therefore, facilities attempting to demonstrate eligibility for the health-based compliance alternative for HCl, either by conducting a lookup table analysis or by conducting a site-specific compliance demonstration, must include emission rates of chlorine and HCl from their boilers. We do not expect hydrogen cyanide emissions from boilers covered under the final rule.

Comment: Commenters stated that the proposal does not address ecological risk that may result from uncontrolled HAP emissions, especially in those areas with sensitive habitats but few people nearby to be exposed and that EPA provided inadequate discussion of how environmental risks will be evaluated.

Response: To identify HAP with potential to cause multimedia and/or environmental effects, the EPA has identified HAP with significant potential to persist in the environment and to bioaccumulate. This list does not include HCl or manganese which are the only HAP with health-based compliance alternatives in the final rule. Additionally, a screening level analysis conducted by the EPA indicates that acute impacts of these HAP from industrial boiler facilities are highly unlikely. For these

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reasons we do not believe that emissions of HCl or manganese from industrial boiler facilities will pose a significant risk to the environment and facilities attempting to comply with the health-based alternatives for these HAP are not required to perform an ecological assessment.

V. Impacts of the Final Rule

A. What are the air impacts?

Nationwide emissions of selected HAP (i.e., HCl, hydrogen fluoride, lead, and nickel) will be reduced by 58,500 tpy for existing units and 73 tpy for new units. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, the total HAP reduction for existing units could be 50,600 tpy. Emissions of HCl will be reduced by 42,000 tpy for existing units and 72 tpy for new units. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, the total HCl emissions reduction for existing units could be 36,400 tpy. Emissions of mercury will be reduced by 1.9 tpy for existing units and 0.006 tpy for new units. Emissions of PM will be reduced by 565,000 tpy for existing units and 480 tpy for new units. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, the total PM emissions reduction for existing

units could be 547,000 tpy. Emissions of total selected nonmercury metals (i.e., arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium) will be reduced by 1,100 tpy for existing units and will be reduced by 1.4 tpy for new units. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, the total nonmercury metals emissions reduction for existing units could be 950 tpy. In addition, emissions of sulfur dioxide (SO_2) are established to be reduced by 113,000 tpy for existing sources and 110 tpy for new sources. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, the total SO_2 emissions reduction for existing units could be 49,000 tpy.

As noted above, use of the health-based compliance alternatives by eligible facilities will affect reductions in HAP, PM (and total non-mercury metals that are generally controlled along with PM), and SO_2. Nevertheless, our analysis indicates that the difference in emissions of HCl and manganese with and without the compliance alternatives will not affect health risks because the compliance alternative is available only to those facilities that demonstrate that their emissions pose little risks. Emissions of PM and SO_2 will still be reduced by the

implementation of other provisions of the Clean Air Act, such as attainment of the health-based National Ambient Air Quality Standards, which include mechanisms to control such emissions.

A discussion of the methodology used to estimate emissions and emissions reductions is presented in "Estimation of Baseline Emissions and Emissions Reductions for Industrial, Commercial, and Institutional Boilers and Process Heaters" in the docket. To estimate the potential impacts of the health-based compliance alternatives, we performed a preliminary "rough" assessment of the large solid fuel subcategory to determine the extent to which facilities might become eligible for the health-based compliance alternatives. Based on the results of this rough assessment, 448 coal-fired boilers could potentially be eligible for the HCl compliance alternative and 386 biomass-fired boilers could be potentially eligible for the TSM compliance alternative.

B. What are the water and solid waste impacts?

The EPA estimates the additional water usage that would result from the MACT floor level of control to be 110 million gallons per year for existing sources and 0.6 million gallons per year for new sources. In addition to the increased water usage, an additional 3.7 million gallons

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per year of wastewater will be produced for existing sources and 0.6 million gallons per year for new sources. The costs of treating the additional wastewater are $18,000 for existing sources and $2,300 for new sources, in advance of any facility demonstrating eligibility for the health-based compliance alternatives. These costs are accounted for in the control costs estimates.

The EPA estimates the additional solid waste that would result from the MACT floor level of control to be 102,000 tpy for existing sources and 1 tpy for new sources. The estimated costs of handling the additional solid waste generated are $1.5 million for existing sources and $17,000 for new sources, in advance of any facility demonstrating eligibility for the health-based compliance alternatives. These costs are also accounted for in the control costs estimates.

A discussion of the methodology used to estimate impacts is presented in "Estimation of Impacts for Industrial, Commercial, and Institutional Boilers and Process Heaters NESHAP" in the docket.

C. <u>What are the energy impacts</u>?

The EPA expects an increase of approximately 1,130 million kilowatt hours (kWh) in national annual energy usage as a result of the final rule, in advance of any facility

demonstrating eligibility for the health-based compliance alternatives. Of this amount, 1,120 million kWh is estimated from existing sources and 13 million kWh is estimated from new sources. The increase results from the electricity required to operate control devices installed to meet the final rule, such as wet scrubbers and fabric filters.

D. What are the control costs?

To estimate the national cost impacts of the final rule for existing sources, EPA developed several model boilers and process heaters and determined the cost of control equipment for these model boilers. The EPA assigned a model boiler or heater to each existing unit in the database based on the fuel, size, design, and current controls. The analysis considered all air pollution control equipment currently in operation at existing boilers and process heaters. Model costs were then assigned to all existing units that could not otherwise meet the proposed emission limits. The resulting total national cost impact of the final rule is $1,790 million in capital expenditures and $860 million per year in total annual costs. Depending on the number of facilities demonstrating eligibility for the health-based compliance alternatives, these costs could be $1,440 million in capital expenditures and $690 million per

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year in total annual costs. The total capital and annual costs include costs for testing, monitoring, and recordkeeping and reporting. Costs include testing and monitoring costs, but not recordkeeping and reporting costs.

Using Department of Energy projections on fuel expenditures, EPA estimated the number of additional boilers that could be potentially constructed. The resulting total national cost impact of the final rule in the 5th year is $58 million in capital expenditures and $18.6 million per year in total annual costs, in advance of any facility demonstrating eligibility for the health-based provisions. Costs are mainly for testing and monitoring.

A discussion of the methodology used to estimate cost impacts is presented in "Methodology and Results of Estimating the Cost of Complying with the Industrial, Commercial, and Institutional Boiler and Process Heater NESHAP" in the docket.

E. What are the economic impacts?

The economic impact analysis shows that the expected price increase for output in the 40 affected industries would be no more than 0.04 percent as a result of the final rule for industrial boilers and process heaters. The expected change in production of affected output is a reduction of only 0.03 percent or less in the same

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industries. In addition, impacts to affected energy markets show that prices of petroleum, natural gas, electricity and coal should increase by no more than 0.05 percent as a result of implementation of the final rule, and output of these types of energy should decrease by no more than 0.01 percent. These impacts are generated in advance of any facility demonstrating eligibility for the health-based compliance alternatives. Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, these impacts on product prices could fall to a 0.03 percent increase, and a decrease in output of the energy types mentioned previously of less than 0.01 percent. Therefore, it is likely that there is no adverse impact expected to occur for those industries that produce output affected by the final rule, such as lumber and wood products, chemical manufacturers, petroleum refining, and furniture manufacturing.

F. <u>What are the social costs and benefits of the final rule</u>?

Our assessment of costs and benefits of the final rule is detailed in the "Regulatory Impact Analysis for the Final Industrial, Commercial, and Institutional Boilers and Process Heaters MACT." The Regulatory Impact Analysis (RIA) is located in the Docket.

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It is estimated that 3 years after implementation of the final rule, HAP will be reduced by 58,500 tpy (53,200 megagrams per year (Mg/yr)) due to reductions in arsenic, beryllium, HCl, and several other HAP from existing affected emission sources. Of these reductions, 42,000 tpy (38,200 Mg/yr) are of HCl. In addition to these reductions, there are 73 tpy (66 Mg/yr) of HAP reductions expected from new sources. Of these reductions, virtually all of them are of HCl. The health effects associated with these HAP are discussed earlier in this preamble. While it is beneficial to society to reduce these HAP, we are unable to quantify and provide a monetized estimate of the benefits at this time.

Despite our inability to quantify and provide monetized benefit estimates from HAP reductions, it is possible to derive rough estimates for one of the more important benefit categories, i.e., the potential number of cancer cases avoided and cancer risk reduced as a result of the imposition of the MACT level of control on this source category. Our analysis suggests that imposition of the MACT level of control would reduce cancer cases at worst case baseline assumptions by possibly tens of cases per year, on average, starting some years after implementation of the final rule. This risk reduction estimate is uncertain, is

likely to overestimate benefits, and should be regarded as an extremely rough estimate. Furthermore, the estimate should be viewed in the context of the full spectrum of unquantified noncancer effects associated with the HAP reductions. Noncancer effects associated with the HAP are presented earlier in this preamble.

The control technologies used to reduce the level of HAP emitted from affected sources are also expected to reduce emissions of PM (PM_{10},$PM_{2.5}$), and sulfur dioxide (SO_2). It is estimated that PM_{10} emissions reductions total approximately 562,000 tpy (510,000 Mg/yr), $PM_{2.5}$ emissions reductions total approximately 159,000 tpy (145,000 Mg/yr), and SO_2 emissions reductions total approximately 113,000 tpy (102,670 Mg/yr). These estimated reductions occur from existing sources in operation 3 years after the implementation of the requirements of the final rule and are expected to continue throughout the life of the sources.

In general, exposure to high concentrations of PM may aggravate existing respiratory and cardiovascular disease including asthma, bronchitis and emphysema, especially in children and the elderly. SO_2 is also a contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. Exposure to $PM_{2.5}$ can lead to

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decreased lung function, and alterations in lung tissue and structure and in respiratory tract defense mechanisms which may then lead to, increased respiratory symptoms and disease, or in more severe cases, premature death or increased hospital admissions and emergency room visits. Children, the elderly, and people with cardiopulmonary disease, such as asthma, are most at risk from these health effects. Fine PM can also form a haze that reduces the visibility of scenic areas, can cause acidification of water bodies, and have other impacts on soil, plants, and materials. As SO_2 emissions transform into PM, they can lead to the same health and welfare effects listed above.

For PM_{10} and $PM_{2.5}$ (including SO_2 contributions to ambient concentrations of $PM_{2.5}$), we provide a monetary estimate for the benefits associated with the reduction in emissions associated with the final rule. To do so, we conducted an air quality assessment to determine the change in ambient concentrations of PM_{10} and $PM_{2.5}$ that result from reductions of PM and SO_2 at existing affected facilities. Unfortunately, our data are not able to define the exact location of the reductions for every affected boiler and process heater. Because of this limitation, the benefits assessment is conducted in two phases. First, an air quality analysis was conducted for emissions reductions from

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those emissions sources that have an known link to a specific control device, which represents approximately 50 percent of the total emissions reductions mentioned above. Using this subset of information, we determined the air quality change nationwide. The results of the air quality assessment served as input to a model that estimates the total monetary value of benefits of the health effects listed above. Total benefits associated with this portion of the analysis (in phase one) are $8.2 billion in the year 2005 (presented in 1999 dollars).

In the second phase of our analysis, for those emissions reductions from affected sources that do not have a known link to a specific control device, the results of the air quality analysis in phase one serve as a reasonable approximation of air quality changes to transfer to the remaining emissions reductions of the final rule. Because there is not a reasonable way to apportion the total benefits of the combined impact of the PM and SO_2 reductions from the air quality and benefit analyses completed above, we performed two additional air quality analyses. One analysis was performed to evaluate the impact on air quality of the PM reductions alone (holding SO_2 unchanged), and one to evaluate the impact on air quality from the SO_2 reductions alone (holding PM unchanged). With independent

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PM and SO_2 air quality assessments, we can determine the total benefit associated with each component of total pollutant reductions. The total benefit associated with the PM and SO_2 reductions with unspecified location (in phase two) are $7.9 billion.

The benefit estimates derived from the air quality modeling in the first phase of our analysis uses an analytical structure and sequence similar to that used in the benefits analyses for the proposed Nonroad Diesel rule and proposed Integrated Air Quality Rule (IAQR) and in the "section 812 studies" analysis of the total benefits and costs of the Clean Air Act. We used many of the same models and assumptions used in the Nonroad Diesel and IAQR analyses as well as other Regulatory Impact Analyses (RIAs) prepared by the Office of Air and Radiation. By adopting the major design elements, models, and assumptions developed for the section 812 studies and other RIAs, we have largely relied on methods which have already received extensive review by the independent Science Advisory Board (SAB), the National Academies of Sciences, by the public, and by other federal agencies.

The benefits transfer method used in the second phase of the analysis is similar to that used to estimate benefits at the proposal of the rule, and in the proposed the

Reciprocating Internal Combustion Engines NESHAP. A similar method has also been used in recent benefits analyses for the proposed Nonroad Large Spark-Ignition Engines and Recreational Engines standards (67 FR 68241, November 8, 2002).

The sum of benefits from the two phases of analysis provide an estimate of the total benefits of the rule. Total benefits of the final rule are approximately $16.3 billion (1999$). This economic benefit is associated with approximately 2,270 avoided premature mortalities, 5,100 avoided cases of chronic bronchitis, thousands of avoided hospital and emergency room visits for respiratory and cardiovascular diseases, tens of thousands of avoided days with respiratory symptoms, and millions of avoided work loss and restricted activity days. This estimate is generated in advance of any facility demonstrating eligibility for the health-based compliance alternatives.

Every benefit-cost analysis examining the potential effects of a change in environmental protection requirements is limited, to some extent, by data gaps, limitations in model capabilities (such as geographic coverage), and uncertainties in the underlying scientific and economic studies used to configure the benefit and cost models. Deficiencies in the scientific literature often result in

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the inability to estimate changes in health and environmental effects. Deficiencies in the economics literature often result in the inability to assign economic values even to those health and environmental outcomes that can be quantified. While these general uncertainties in the underlying scientific and economics literatures are discussed in detail in the RIA and its supporting documents and references, the key uncertainties which have a bearing on the results of the benefit-cost analysis of today's action are the following:

1. The exclusion of potentially significant benefit categories (e.g., health and ecological benefits of reduction in hazardous air pollutants emissions);

2. Errors in measurement and projection for variables such as population growth;

3. Uncertainties in the estimation of future year emissions inventories and air quality;

4. Uncertainties associated with the extrapolation of air quality monitoring data to some unmonitored areas required to better capture the effects of the standards on the affected population;

5. Variability in the estimated relationships of health and welfare effects to changes in pollutant concentrations; and

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6. Uncertainties associated with the benefit transfer approach.

7. Uncertainties in the size of the effect estimates linking air pollution and health endpoints,

8. Uncertainties about relative toxicity of different components within the complex mixture.

Despite these uncertainties, we believe the benefit-cost analysis provides a reasonable indication of the expected economic benefits of the final rule under a given set of assumptions.

Based on estimated compliance costs (control + administrative costs associated with Paperwork Reduction Act requirements associated with the rule and predicted changes in the price and output of electricity), the estimated annualized social costs of the Industrial, Commercial, and Institutional Boilers and Process Heaters NESHAP are $863 million (1999$). Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, these annualized social costs could fall to $746 million. Social costs are different from compliance costs in that social costs take into account the interactions between affected producers and the consumers of affected products in response to the imposition of the compliance costs.

As explained above, we estimate $16.3 billion in benefits from the final rule, compared to $863 million in costs. It is important to put the results of this analysis in the proper context. The large benefit estimate is not attributable to reducing human and environmental exposure to the HAPs that are reduced by this rule. It arises from ancillary reductions in PM and SO_2 that result from controls aimed at complying with the NESHAP. Although consideration of ancillary benefits is reasonable, we note that these benefits are not uniquely attributable to the regulation. The Agency believes nonetheless that the key rationale for controlling arsenic, beryllium, HCl, and the other HAPs associated with this rule is to reduce public and environmental exposure to these HAPs, thereby reducing risk to public health and wildlife. Although the available science does not support quantification of these benefits at this time, the Agency believes the qualitative benefits are large enough to justify substantial investment in these emission reductions.

It should be recognized, however, that this analysis does not account for many of the potential benefits that may result from these actions. Thus, our estimate of total benefits also includes a "B" to represent those additional health and environmental benefits which could not be

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expressed in quantitative incidence and/or economic value terms. The net benefits would be greater if all the benefits of the other pollutant reductions could be quantified. Notable omissions to the net benefits include all benefits of HAP reductions, including reduced cancer incidences, toxic morbidity effects, and cardiovascular and CNS effects, and all welfare effects from reduction of ambient PM and SO_2. A full appreciation of the overall economic consequences of the industrial boiler and process heater standards requires consideration of all benefits and costs expected to result from the final rule, not just those benefits and costs that could be expressed here in dollar terms. A full listing of the benefit categories that could not be quantified or monetized in our base estimate are provided in Table 2 of this preamble.

TABLE 2.—UNQUANTIFIED BENEFIT CATEGORIES

	Unquantified benefit categories associated with HAP	Unquantified benefit categories associated with PM

Health Categories	— Airway responsiveness — Pulmonary inflammation — Increases susceptibility to respiratory infection — Acute inflammation and respiratory cell damage — Chronic respiratory damage/Premature aging of lungs — Emergency room visits for asthma	— Changes in pulmonary function. — Morphological changes. Altered host defense mechanisms — Other chronic respiratory disease — Emergency room visits for asthma — Emergency visits for non-asthma respiratory and cardiovascular causes — Lower and upper respiratory systems — Acute bronchitis — Shortness of breath — Increased school absence rates — Materials damage — Damage to ecosystems (e.g., acid sulfate deposition). — Nitrates in drinking water — Visibility in recreational and residential areas
Welfare Categories	— Ecosystem and vegetation effects — Damage to urban ornamentals (e.g. grass, flowers, shrubs, and trees in urban areas) — Commercial field crops — Fruit and vegetable crops — Reduced yields of tree seedlings, commercial and non-commercial forests — Damage to ecosystems — Materials damage	

Using the results of the benefit analysis, we can use benefit-cost comparison (or net benefits) as another tool to evaluate the reallocation of society's resources needed to address the pollution externality created by the operation of industrial boilers and process heaters. The additional costs of internalizing the pollution produced at major sources of emissions from industrial boilers and process

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heaters are compared to the improvement in society's well-being from a cleaner and healthier environment. Comparing benefits of the final rule to the costs imposed by alternative ways to control emissions optimally identifies a strategy that results in the highest net benefit to society. In the final rule, we include only one option, the minimal level of control mandated by the CAA, or the MACT floor. Other alternatives that lead to higher levels of control (or beyond-the-floor alternatives) lead to higher estimates of benefits net of costs, but also lead to additional economic impacts, including more substantial impacts to small entities. For more details, please refer to the RIA for the final rule.

Based on estimated compliance costs associated with the final rule and the predicted change in prices and production in the affected industries, the estimated annualized social costs of the final rule are $863 million (1999 dollars). This estimate of social cost is generated in advance of any facility demonstrating eligibility for the health-based compliance alternatives. Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, these annualized social costs could fall to $746 million. Social costs are different from compliance costs in that social costs take

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into account the interactions of consumers and producers of affected products in response to the imposition of the compliance costs. Therefore, the Agency's estimate of monetized benefits net of costs is $15.4 billion + B (1999 dollars) in 2005.

VI. Administrative and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether a regulatory action is "significant" and, therefore, subject to review by the OMB and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) raise novel legal or policy issues arising out of

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legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, the EPA has determined that the final rule is a "significant regulatory action" because it has an annual effect on the economy of over $100 million. As such, the final rule was submitted to OMB for review.

B. Paperwork Reduction Act

The information collection requirements in the final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The information collection requirements are not enforceable until OMB approves them.

The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emission standards. These recordkeeping and reporting requirements are specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies set forth in 40 CFR part 2, subpart B.

The final rule requires maintenance inspections of the

control devices, but does not require any notifications or reports beyond those required by the General Provisions. The recordkeeping requirements require only the specific information needed to determine compliance.

The annual monitoring, reporting, and recordkeeping burden for this collection (averaged over the first 3 years after the effective date of the final rule) is estimated to be $91 million. This includes 1.2 million labor hours per year at a total labor cost of $67 million per year, and total non-labor capital costs of $24 million per year. This estimate includes a one-time performance test, semiannual excess emission reports, maintenance inspections, notifications, and recordkeeping. The total burden for the Federal government (averaged over the first 3 years after the effective date of the final rule) is estimated to be 346,000 hours per year at a total labor cost of $14 million per year. Table 4 of this preamble shows the average annualized burden for monitoring, reporting, and recordkeeping for each subcategory.

TABLE 4. SUMMARY OF THE AVERAGE REPORTING AND RECORDKEEPING COSTS

Subcategory	Total Labor Costs ($)	Total Capital Costs ($)	Total Costs ($)
Large Solid Fuel Units	56,253,000	12,488,000	68,741,000

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Limited Use Solid Fuel Units	2,565,000	2,267,000	4,832,000
Small Solid Fuel Units	627,000	111,000	738,000
Large Liquid Fuel Units	498,000	491,000	989,000
Limited Use Liquid Fuel Units	214,000	264,000	478,000
Small Liquid Fuel Units	442,000	0	442,000
Large Gaseous Fuel Units	3,673,000	6,615,000	10,288,000
Limited Use Gaseous Fuel Units	663,000	1,209,000	1,872,000
Small Gaseous Fuel Units	2,413,000	0	2,413,000

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of

information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the Federal Register to display the OMB control number for the approved information collection requirements contained in this final rule.

The EPA requested comments on the need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques.

C. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with the final rule. We have also determined that the final rule will not have a significant impact on a substantial number of small entities.

For purposes of assessing the impacts of the final rule

on small entities, small entity is defined as:

(1) A small business according to Small Business Administration size standards by the North American Industry Classification System (NAICS) category of the owning entity. The range of small business size standards for the 40 affected industries ranges from 500 to 1,000 employees, except for petroleum refining and electric utilities. In these latter two industries, the size standard is 1,500 employees and a mass throughput of 75,000 barrels/day or less, and 4 million kilowatt-hours of production or less, respectively;

(2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and

(3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

After considering the economic impact of the final rule on small entities, we have determined that the final rule will not have a significant economic impact on a substantial number of small entities. Based on SBA size definitions for the affected industries and reported sales and employment data, EPA identified 185 of the 576 entities, or 32 percent, owning affected facilities as small entities.

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Although small entities represent 32 percent of the entities within the source category, they are expected to incur only 4 percent of the total compliance costs of $862.7 million (1998 dollars). There are only ten small entities with compliance costs equal to or greater than 3 percent of their sales. In addition, there are only 24 small entities with cost-to-sales ratios between 1 and 3 percent.

An economic impact analysis was performed to estimate the changes in product price and production quantities for the final rule. As mentioned in the summary of economic impacts earlier in this preamble, the estimated changes in prices and output for affected entities is no more than 0.05 percent. For more information, consult the docket for the final rule.

It should be noted that these small entity impacts are in advance of any facility demonstrating eligibility for the health-based compliance alternatives. Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, the estimated small entity impacts could fall to eight small entities with compliance costs equal to or greater than 3 percent of their sales, and 14 small entities with compliance costs between 1 and 3 percent of their sales.

The final rule will not have a significant economic

impact on a substantial number of small entities as a result of several decisions EPA made regarding the development of the rule, which resulted in limiting the impact of the rule on small entities. First, as mentioned earlier in this preamble, EPA identified small units (heat input of 10 MMBtu/hr or less) and limited use boilers (operate less than 10 percent of the time) as separate subcategories different from large units. Many small and limited use units are located at small entities. As also discussed earlier, the results of the MACT floor analysis for these subcategories of existing sources was that no MACT floor could be identified except for the limited use solid fuel subcategory, which is less stringent than the MACT floor for large units. Furthermore, the results of the beyond-the-floor analysis for these subcategories indicated that the costs would be too high to consider them feasible options. Consequently, the final rule contains no emission limitations for any of the existing small and limited use subcategories except the existing limited use solid fuel subcategory. In addition, the alternative metals emission limit resulted in minimizing the impacts on small entities since some of the potential entities burning a fuel containing very little metals are small entities.

D. Unfunded Mandates Reform Act of 1995

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Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, we generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires us to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows us to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the EPA Administrator publishes with the final rule an explanation why that alternative was not adopted. Before we establish any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, we must develop a small government agency plan

under section 203 of the UMRA. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of regulatory promulgation with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

We determined that the final rule contains a Federal mandate that may result in expenditures of $100 million or more for State, local, and Tribal governments, in the aggregate, or the private sector in any 1 year. Accordingly, we have prepared a written statement (titled "Unfunded Mandates Reform Act Analysis for the Industrial Boilers and Process Heaters NESHAP)" under section 202 of the UMRA, which is summarized below.

Statutory Authority

As discussed in this preamble, the statutory authority for the final rulemaking is section 112 of the CAA. Title III of the CAA Amendments was enacted to reduce nationwide air toxic emissions. Section 112(b) of the CAA lists the 188 chemicals, compounds, or groups of chemicals deemed by Congress to be HAP. These toxic air pollutants are to be regulated by NESHAP.

Section 112(d) of the CAA directs us to develop NESHAP,

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which require existing and new major sources to control emissions of HAP using MACT based standards. The final rule applies to all industrial, commercial, and institutional boilers and process heaters located at major sources of HAP emissions.

In compliance with section 205(a) of the UMRA, we identified and considered a reasonable number of regulatory alternatives. Additional information on the costs and environmental impacts of these regulatory alternatives is presented in the docket.

The regulatory alternative upon which the final rule is based represents the MACT floor for industrial boilers and process heaters and, as a result, it is the least costly and least burdensome alternative.

Social Costs and Benefits

The regulatory impact analysis prepared for the final rule including the EPA's assessment of costs and benefits, is detailed in the "Regulatory Impact Analysis for the Industrial Boilers and Process Heaters MACT" in the docket. Based on estimated compliance costs associated with the final rule and the predicted change in prices and production in the affected industries, the estimated social costs of the final rule are $863 million (1999 dollars). Depending on the number of affected facilities demonstrating

eligibility for the health-based compliance alternatives, these annualized social costs could fall to $746 million.

It is estimated that 5 years after implementation of the final rule, HAP will be reduced by 58,500 tpy due to reductions in arsenic, beryllium, dioxin, hydrochloric acid, and several other HAP from industrial boilers and process heaters. Studies have determined a relationship between exposure to these HAP and the onset of cancer, however, there are some questions remaining on how cancers that may result from exposure to these HAP can be quantified in terms of dollars. Therefore, the EPA is unable to provide a monetized estimate of the benefits of the HAP reduced by the final rule at this time. However, there are significant reductions in PM and in SO_2 that occur. Reductions of 560,000 tons of PM with a diameter of less than or equal to 10 micrometers (PM_{10}), 159,000 tons of PM with a diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and 112,000 tons of SO_2 are expected to occur. These reductions occur from existing sources in operation 5 years after the implementation of the regulation and are expected to continue throughout the life of the affected sources. The major health effect that results from these PM and SO_2 emissions reductions is a reduction in premature mortality. Other health effects that occur are reductions in chronic

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bronchitis, asthma attacks, and work-lost days (i.e., days when employees are unable to work).

While we are unable to monetize the benefits associated with the HAP emissions reductions, we are able to monetize the benefits associated with the PM and SO_2 emissions reductions. For SO_2 and PM, we estimated the benefits associated with health effects of PM, but were unable to quantify all categories of benefits (particularly those associated with ecosystem and environmental effects). Unquantified benefits are noted with "B" in the estimates presented below. Our primary estimate of the monetized benefits in 2005 associated with the implementation of the proposed alternative is $16.3 billion + B (1999 dollars). This estimate is about $15.3 billion + B (1999 dollars) higher than the estimated social costs shown earlier in this section. These benefit estimates are in advance of any facility demonstrating eligibility for the health-based compliance alternatives. Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, the benefit estimate presuming the health-based compliance alternatives is $14.5 billion + B, which is $1.7 billion lower than the estimate for the final rule. This estimate is $13.8 billion + B higher than the estimated social costs presuming the health-based compliance

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alternatives. The general approach to calculating monetized benefits is discussed in more detail earlier in this preamble. For more detailed information on the benefits estimated for the final rule, refer to the RIA in the docket.

Future and Disproportionate Costs

The Unfunded Mandates Act requires that we estimate, where accurate estimation is reasonably feasible, future compliance costs imposed by the rule and any disproportionate budgetary effects. Our estimates of the future compliance costs of the final rule are discussed previously in this preamble.

We do not feel that there will be any disproportionate budgetary effects of the final rule on any particular areas of the country, State or local governments, types of communities (e.g., urban, rural), or particular industry segments. This is true for the 257 facilities owned by 54 different government bodies, and this is borne out by the results of the "Economic Impact Analysis of the Industrial Boilers and Process Heaters NESHAP," the results of which are discussed previously in this preamble.

Effects on the National Economy

The Unfunded Mandates Act requires that we estimate the effect of the final rule on the national economy. To the

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extent feasible, we must estimate the effect on productivity, economic growth, full employment, creation of productive jobs, and international competitiveness of the U.S. goods and services, if we determine that accurate estimates are reasonably feasible and that such effect is relevant and material.

The nationwide economic impact of the final rule is presented in the "Economic Impact Analysis for the Industrial Boilers and Process Heaters MACT" in the docket. This analysis provides estimates of the effect of the final rule on some of the categories mentioned above. The results of the economic impact analysis are summarized previously in this preamble. The results show that there will be little impact on prices and output from the affected industries, and little impact on communities that may be affected by the final rule. In addition, there should be little impact on energy markets (in this case, coal, natural gas, petroleum products, and electricity). Hence, the potential impacts on the categories mentioned above should be minimal.

Consultation with Government Officials

The Unfunded Mandates Act requires that we describe the extent of the EPA's prior consultation with affected State, local, and tribal officials, summarize the officials'

comments or concerns, and summarize our response to those comments or concerns. In addition, section 203 of the UMRA requires that we develop a plan for informing and advising small governments that may be significantly or uniquely impacted by a rule. Although the final rule does not significantly affect any State, local, or Tribal governments, we have consulted with State and local air pollution control officials. We also have held meetings on the final rule with many of the stakeholders from numerous individual companies, environmental groups, consultants and vendors, labor unions, and other interested parties. We have added materials to the docket to document these meetings.

In addition, we have determined that the final rule contains no regulatory requirements that might significantly or uniquely affect small governments. While some small governments may have some sources affected by the final rule, the impacts are not expected to be significant. Therefore, the final rule is not subject to the requirements of section 203 of the UMRA. However, EPA did complete a report containing analyses called for in the UMRA as a response to comments from many municipal utilities regarding the final rule and its potential impacts. This report, "Unfunded Mandates Reform Act Analysis for the Industrial

Boilers and Process Heaters NESHAP," is in the docket.

E. Executive Order 13132: Federalism

Executive Order 13132 requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

The final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132.

The agency is required by section 112 of the CAA, to establish the standards in the final rule. The final rule primarily affects private industry, and does not impose significant economic costs on State or local governments. The final rule does not include an express provision preempting State or local regulations. Thus, the

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requirements of section 6 of the Executive Order do not apply to the final rule.

Although section 6 of Executive Order 13132 does not apply to the final rule, we consulted with representatives of State and local governments to enable them to provide meaningful and timely input into the development of the final rule. This consultation took place during the ICCR Federal Advisory Committee Act (FACA) committee meetings where members representing State and local governments participated in developing recommendations for EPA's combustion-related rulemakings, including the final rule. The concerns raised by representatives of State and local governments were considered during the development of the final rule.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicited comment on the final rule from State and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175 (65 FR 67249, November 9, 2000) requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal

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implications." The final rule does not have tribal implications, as specified in Executive Order 13175.

The final rule does not significantly or uniquely affect the communities of Indian tribal governments. We do not know of any industrial-commercial-institutional boilers or process heaters owned or operated by Indian tribal governments. However, if there are any, the effect of these rules on communities of tribal governments would not be unique or disproportionate to the effect on other communities. Thus, Executive Order 13175 does not apply to the final rule. The EPA specifically solicited additional comment on the final rule from tribal officials, but received none.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any regulation that: (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children.

If the regulatory action meets both criteria, the EPA must evaluate the environmental health or safety effects of the planned regulation on children, and explain why the

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planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the EPA.

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Executive Order has the potential to influence the regulation. The final rule is not subject to Executive Order 13045 because it is based on technology performance and not on health or safety risks.

H. Executive Order 13211: Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

Executive Order 13211 (66 FR 28355, May 22, 2001) provides that agencies shall prepare and submit to the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget, a Statement of Energy Effects for certain actions identified as "significant energy actions." Section 4(b) of Executive Order 13211 defines "significant energy actions" as "any action by an agency (normally published in the Federal Register) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of final rulemaking, and

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notices of final rulemaking: (1)(i) That is a significant regulatory action under Executive Order 12866 or any successor order, and (ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a "significant energy action." The final rule is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The basis for the determination is as follows.

The reduction in petroleum product output, which includes reductions in fuel production, is estimated at only 0.001 percent, or about 68 barrels per day based on 2000 U.S. fuel production nationwide. That is a minimal reduction in nationwide petroleum product output. The reduction in coal production is estimated at only 0.014 percent, or about 3.5 million tpy (or less than 1,000 tons per day) based on 2000 U.S. coal production nationwide. The combination of the increase in electricity usage estimated with the effect of the increased price of affected output yields an increase in electricity output estimated at only 0.012 percent, or about 0.72 billion kilowatt-hours per year based on 2000 U.S. electricity production nationwide. All

energy price changes estimated show no increase in price more than 0.05 percent nationwide, and a similar result occurs for energy distribution costs. We also expect that there will be no discernable impact on the import of foreign energy supplies, and no other adverse outcomes are expected to occur with regards to energy supplies. All of the results presented above account for the pass through of costs to consumers, as well as the cost impact to producers. For more information on the estimated energy effects, please refer to the economic impact analysis for the final rule. The analysis is available in the public docket. It should be noted that these energy impact estimates are in advance of any facility demonstrating eligibility for the health-based compliance alternatives.

Depending on the number of affected facilities demonstrating eligibility for the health-based compliance alternatives, the reduction in petroleum product output, which includes reductions in fuel production, could fall to 65 barrels per day, or only 0.001 percent. The reduction in coal production could fall to only 0.010 percent, or about 2.5 million tpy based on 2000 U.S. coal production nationwide. The combination of the increase in electricity usage estimated with the effect of the increased price of affected output could yield an increase in electricity

output could fall to only 0.0067 percent, or about 0.40 billion kilowatt-hours per year based on 2000 U.S. electricity production nationwide. All energy price changes estimated could now fall to increases of no more than 0.04 percent nationwide, and a similar result occurs for energy distribution costs. There should be no discernable impact on import of foreign energy supplies, and no other adverse outcomes are expected to occur with regards to energy supplies. All of the results presented with presumption of the health-based compliance alternatives also account for the pass through of costs to consumers as well as the cost impact to producers.

Therefore, we conclude that the final rule when implemented is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Public Law No. 104-113; 15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards in their regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business

practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs EPA to provide Congress, through annual reports to the OMB, with explanations when an agency does not use available and applicable voluntary consensus standards.

The final rule involves technical standards. The EPA cites the following standards in the final rule: EPA Methods 1, 2, 2F, 2G, 3A, 3B, 4, 5, 5D, 17, 19, 26, 26A, 29 of 40 CFR part 60. Consistent with the NTTAA, EPA conducted searches to identify voluntary consensus standards in addition to these EPA methods. No applicable voluntary consensus standards were identified for EPA Methods 2F, 2G, 5D, and 19. The search and review results have been documented and are placed in the docket for the final rule.

The three voluntary consensus standards described below were identified as acceptable alternatives to EPA test methods for the purposes of the final rule.

The voluntary consensus standard ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," is cited in the final rule for its manual method for measuring the oxygen, carbon dioxide, and carbon monoxide content of exhaust gas. This part of ASME PTC 19-10-1981-Part 10 is an acceptable alternative to Method 3B.

The voluntary consensus standard ASTM D6522-00,

"Standard Test Method for the Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers and Process Heaters Using Portable Analyzers" is an acceptable alternative to EPA Method 3A for identifying carbon monoxide and oxygen concentrations for the final rule when the fuel is natural gas.

The voluntary consensus standard ASTM Z65907, "Standard Method for Both Speciated and Elemental Mercury Determination," is an acceptable alternative to EPA Method 29 (portion for mercury only) for the purpose of the final rule. This standard can be used in the final rule to determine the mercury concentration in stack gases for boilers with rated heat input capacities of greater than 250 MMBtu per hour.

In addition to the voluntary consensus standards EPA uses in the final rule, the search for emissions measurement procedures identified 15 other voluntary consensus standards. The EPA determined that 13 of these 15 standards identified for measuring emissions of the HAP or surrogates subject to the emission standards were impractical alternatives to EPA test methods for the purposes of the final rule. Therefore, EPA does not intend to adopt these

standards for this purpose. (See Docket ID No. OAR-2002-0058 for further information on the methods.)

Two of the 15 voluntary consensus standards identified in this search were not available at the time the review was conducted for the purposes of the final rule because they are under development by a voluntary consensus body: ASME/BSR MFC 13M, "Flow Measurement by Velocity Traverse," for EPA Method 2 (and possibly 1); and ASME/BSR MFC 12M, "Flow in Closed Conduits Using Multiport Averaging Pitot Primary Flowmeters," for EPA Method 2.

Section 63.7520 and Tables 4A through 4D of the final rule list the EPA testing methods. Under §63.7(f) and §63.8(f) of subpart A, 40 CFR part 63, of the General Provisions, a source may apply to EPA for permission to use alternative test methods or alternative monitoring requirements in place of any of the EPA testing methods, performance specifications, or procedures.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801, et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United

States. The EPA will submit a report containing the final rule and other required information to the United States Senate, the United States House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is a "major rule" as defined by 5 U.S.C. section 804(2). The rule will be effective on [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER].

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List of Subjects in 40 CFR part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

_____
Dated: February 26, 2004

/s/
_____
Michael O. Leavitt,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is amended as follows:

Part 63--[AMENDED]

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, et seq.

SUBPART A –[AMENDED]

2. Section 63.14 is amended by adding paragraphs (b)(30) through (46) and paragraph (i)(4). The additions read as follows:

§63.14 Incorporation by Reference.

* * * * *

(b) * * *

(30) ASTM Method D388-99e1, Standard Classification of Coals by Rank, IBR approved for §63.7575.

(31) ASTM D396-02a, Standard Specification for Fuel Oils, IBR approved for §63.7575.

(32) ASTM D1835-03a, Standard Specification for Liquified Petroleum (LP) Gases, IBR approved for §63.7575.

(33) ASTM D2013-01, Standard Practice for Preparing Coal Samples for Analysis, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(34) ASTM D2234/D2234M-03, Standard Practice for Collection of a Gross Sample of Coal, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(35) ASTM D3173-02, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(36) ASTM D3683-94 (2000), Standard Test Method for Trace Elements in Coal and Coke Ash Absorption, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(37) ASTM D3684-01, Standard Test Method for Total Mercury in Coal by the Oxygen Bomb Combustion/Atomic Absorption Method, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(38) ASTM D5198-92 (2003), Standard Practice for Nitric Acid Digestion of Solid Waste, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(39) ASTM D5865-03a, Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(40) ASTM D6323-98 (2003), Standard Guide for Laboratory Subsampling of Media Related to Waste Management Activities, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(41) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for Table 5 to Subpart DDDDD of Part 63 — Requirements for Performance Tests.

(42) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for Table 5 to Subpart DDDDD of Part 63 — Requirements for Performance Tests.

(43) ASTM E711-87 (1996), Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(44) ASTM E776-87 (1996), Standard Test Method for Forms of Chlorine in Refuse-Derived Fuel, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(45) ASTM E871-82 (1998), Standard Method of Moisture Analysis of Particulate Wood Fuels, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

(46) ASTM E885-88 (1996), Standard Test Methods for Analyses of Metals in Refuse-Derived Fuel by Atomic Absorption Spectroscopy, IBR approved for Table 6 to Subpart DDDDD of Part 63 — Requirements for Fuel Analysis Testing.

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(i) * * *

(4) ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses - Part 10, IBR approved for Table 5 to Subpart DDDDD of Part 63 - Performance Testing Requirements.

3. Part 63 is amended by adding subpart DDDDD to read as follows:

Subpart DDDDD--National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters

Sec.

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Appendix

Appendix A to Subpart DDDDD - Methodology and Criteria for Demonstrating Eligibility for the Health-Based Compliance Alternatives Specified for the Large Solid Fuel Subcategory

What this Subpart Covers

<u>§63.7480 What is the purpose of this subpart?</u>

This subpart establishes national emission limits and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional

boilers and process heaters. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limits and work practice standards.

§63.7485 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2 or §63.760 (40 CFR part 63, subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities), except as specified in §63.7491.

§63.7490 What is the affected source of this subpart?

(a) This subpart applies to new, reconstructed, or existing affected sources as described in paragraphs (a)(1) and (2) of this section.

(1) The affected source of this subpart is the collection of all existing industrial, commercial, and institutional boilers and process heaters within a subcategory located at a major source as defined in §63.7575.

(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler or process heater located at a major source as

defined in §63.7575.

(b) A boiler or process heater is new if you commence construction of the boiler or process heater after January 13, 2003, and you meet the applicability criteria at the time you commence construction.

(c) A boiler or process heater is reconstructed if you meet the reconstruction criteria as defined in §63.2, you commence reconstruction after January 13, 2003, and you meet the applicability criteria at the time you commence reconstruction.

(d) A boiler or process heater is existing if it is not new or reconstructed.

§63.7491 Are any boilers or process heaters not subject to this subpart?

The types of boilers and process heaters listed in paragraphs (a) through (o) of this section are not subject to this subpart.

(a) A municipal waste combustor covered by 40 CFR part 60, subpart AAAA, subpart BBBB or subpart Cb.

(b) A hospital/medical/infectious waste incinerator covered by 40 CFR part 60, subpart Ce or subpart Ec.

(c) An electric utility steam generating unit that is a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces

electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity, and supplies more than one-third of its potential electric output capacity, and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit.

(d) A boiler or process heater required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by 40 CFR part 63, subpart EEE (e.g., hazardous waste boilers).

(e) A commercial and industrial solid waste incineration unit covered by 40 CFR part 60, subpart CCCC or subpart DDDD.

(f) A recovery boiler or furnace covered by 40 CFR part 63, subpart MM.

(g) A boiler or process heater that is used specifically for research and development. This does not include units that only provide heat or steam to a process at a research and development facility.

(h) A hot water heater as defined in this subpart.

(i) A refining kettle covered by 40 CFR part 63, subpart X.

(j) An ethylene cracking furnace covered by 40 CFR part 63, subpart YY.

(k) Blast furnace stoves as described in the EPA document, entitled "National Emission Standards for Hazardous Air Pollutants (NESHAP) for Integrated Iron and Steel Plants - Background Information for Proposed Standards," (EPA-453/R-01-005).

(l) Any boiler and process heater specifically listed as an affected source in another standard(s) under 40 CFR part 63.

(m) Any boiler and process heater specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act (CAA).

(n) Temporary boilers as defined in this subpart.

(o) Blast furnace gas fuel-fired boilers and process heaters as defined in this subpart.

§63.7495 When do I have to comply with this subpart?

(a) If you have a new or reconstructed boiler or process heater, you must comply with this subpart by [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or upon startup of your boiler or process heater, whichever is later.

(b) If you have an existing boiler or process heater, you must comply with this subpart no later than [INSERT THE DATE 3 YEARS AFTER PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, paragraphs (c)(1) and (2) of this section apply to you.

(1) Any new or reconstructed boiler or process heater at the existing facility must be in compliance with this subpart upon startup.

(2) Any existing boiler or process heater at the existing facility must be in compliance with this subpart within 3 years after the facility becomes a major source.

(d) You must meet the notification requirements in §63.7545 according to the schedule in §63.7545 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limits and work practice standards in this subpart.

Emission Limits and Work Practice Standards

<u>§63.7499 What are the subcategories of boilers and process heaters</u>?

(a) The subcategories of boilers and process heaters are large solid fuel, limited use solid fuel, small solid fuel, large liquid fuel, limited use liquid fuel, small liquid fuel, large gaseous fuel, limited use gaseous fuel, and small gaseous fuel. Each subcategory is defined in §63.7575.

(b) If you change an existing boiler or process heater in the large solid fuel subcategory such that its applicable subcategory also changes, and the change does not meet the definition of reconstruction as defined in subpart A of this part, you may choose to meet the applicable emission limits for the original large solid fuel subcategory.

§63.7500 What emission limits, work practice standards, and operating limits must I meet?

(a) You must meet the requirements in paragraphs (a)(1) and (2) of this section.

(1) You must meet each emission limit and work practice standard in Table 1 to this subpart that applies to your boiler or process heater, except as provided under §63.7507.

(2) You must meet each operating limit in Tables 2 through 4 to this subpart that applies to your boiler or process heater. If you use a control device or combination of control devices not covered in Tables 2 through 4 to this subpart, or you wish to establish and monitor an alternative operating limit and alternative monitoring parameters, you must apply to the United States Environmental Protection Agency (EPA) Administrator for approval of alternative monitoring under §63.8(f).

(b) As provided in §63.6(g), EPA may approve use of an

alternative to the work practice standards in this section.

General Compliance Requirements

§63.7505 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limits (including operating limits) and the work practice standards in this subpart at all times, except during periods of startup, shutdown, and malfunction.

(b) You must always operate and maintain your affected source, including air pollution control and monitoring equipment, according to the provisions in §63.6(e)(1)(i).

(c) You can demonstrate compliance with any applicable emission limit using fuel analysis if the emission rate calculated according to §63.7530(d) is less than the applicable emission limit. Otherwise, you must demonstrate compliance using performance testing.

(d) If you demonstrate compliance with any applicable emission limit through performance testing, you must develop a site-specific monitoring plan according to the requirements in paragraphs (d)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under §63.8(f).

(1) For each continuous monitoring system (CMS)

required in this section, you must develop and submit to the EPA Administrator for approval a site-specific monitoring plan that addresses paragraphs (d)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan at least 60 days before your initial performance evaluation of your CMS.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(2) In your site-specific monitoring plan, you must also address paragraphs (d)(2)(i) through (iii) of this section.

(i) Ongoing operation and maintenance procedures in accordance with the general requirements of §63.8(c)(1), (3), and (4)(ii);

(ii) Ongoing data quality assurance procedures in

accordance with the general requirements of §63.8(d); and

(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of §63.10(c), (e)(1), and (e)(2)(i).

(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

(e) If you have an applicable emission limit or work practice standard, you must develop and implement a written startup, shutdown, and malfunction plan (SSMP) according to the provisions in §63.6(e)(3).

<u>§63.7506 Do any boilers or process heaters have limited requirements</u>?

(a) New or reconstructed boilers and process heaters in one of the liquid fuel subcategories (the large liquid fuel subcategory, the limited use liquid fuel subcategory, or the small liquid fuel subcategory) that burn only fossil fuels and other gases and do not burn any residual oil are subject to the emission limits and applicable work practice standards in Table 1 to this subpart. You are not required to conduct a performance test to demonstrate compliance with the emission limits. You are not required to set and

maintain operating limits to demonstrate continuous compliance with the emission limits. However, you must meet the requirements in paragraphs (a)(1) and (2) of this section.

(1) To demonstrate initial compliance, you must include a signed statement in the Notification of Compliance Status report required in §63.7545(e) that indicates you burn only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels.

(2) To demonstrate continuous compliance with the applicable emission limits, you must also keep records that demonstrate that you burn only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels. You must also include a signed statement in each semiannual compliance report required in §63.7550 that indicates you burned only liquid fossil fuels other than residual oils, either alone or in combination with gaseous fuels, during the reporting period.

(b) The affected boilers and process heaters listed in paragraphs (b)(1) through (3) of this section are subject to only the initial notification requirements in §63.9(b) (i.e., they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSMP, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart or any other requirements in

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subpart A of this part).

(1) Existing large and limited use gaseous fuel units.

(2) Existing large and limited use liquid fuel units.

(3) New small liquid fuel units that burn only gaseous fuels or distillate oil. New small liquid fuel boilers and process heaters that commence burning of any other type of liquid fuel must comply with all applicable requirements of this subpart and subpart A of this part upon startup of burning the other type of liquid fuel.

(c) The affected boilers and process heaters listed in paragraphs (c)(1) through (4) of this section are not subject to the initial notification requirements in §63.9(b) and are not subject to any requirements in this subpart or in subpart A of this part (i.e., they are not subject to the emission limits, work practice standards, performance testing, monitoring, SSM plans, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart, or any other requirements in subpart A of this part.

(1) Existing small solid fuel boilers and process heaters.

(2) Existing small liquid fuel boilers and process heaters.

(3) Existing small gaseous fuel boilers and process

heaters.

(4) New small gaseous fuel units.

§63.7507 What are the health-based compliance alternatives for the hydrogen chloride (HCl) and total selected metals (TSM) standards?

(a) As an alternative to the requirement for large solid fuel boilers located at a single facility to demonstrate compliance with the HCl emission limit in Table 1 to this subpart, you may demonstrate eligibility for the health-based compliance alternative for HCl emissions under the procedures prescribed in appendix A to this subpart.

(b) In lieu of complying with the TSM emission standards in Table 1 to this subpart based on the sum of emissions for the eight selected metals, you may demonstrate eligibility for complying with the TSM emission standards in Table 1 based on the sum of emissions for seven selected metals (by excluding manganese emissions from the summation of TSM emissions) under the procedures prescribed in appendix A of this subpart.

Testing, Fuel Analyses, and Initial Compliance Requirements

§63.7510 What are my initial compliance requirements and by what date must I conduct them?

(a) For affected sources that elect to demonstrate compliance with any of the emission limits of this subpart

through performance testing, your initial compliance requirements include conducting performance tests according to §63.7520 and Table 5 to this subpart, conducting a fuel analysis for each type of fuel burned in your boiler or process heater according to §63.7521 and Table 6 to this subpart, establishing operating limits according to §63.7530 and Table 7 to this subpart, and conducting CMS performance evaluations according to §63.7525.

(b) For affected sources that elect to demonstrate compliance with the emission limits for HCl, mercury, or TSM through fuel analysis, your initial compliance requirement is to conduct a fuel analysis for each type of fuel burned in your boiler or process heater according to §63.7521 and Table 6 to this subpart and establish operating limits according to §63.7530 and Table 8 to this subpart.

(c) For affected sources that have an applicable work practice standard, your initial compliance requirements depend on the subcategory and rated capacity of your boiler or process heater. If your boiler or process heater is in any of the limited use subcategories or has a heat input capacity less than 100 MMBtu per hour, your initial compliance demonstration is conducting a performance test for carbon monoxide according to Table 5 to this subpart. If your boiler or process heater is in any of the large

subcategories and has a heat input capacity of 100 MMBtu per hour or greater, your initial compliance demonstration is conducting a performance evaluation of your continuous emission monitoring system for carbon monoxide according to §63.7525(a).

(d) For existing affected sources, you must demonstrate initial compliance no later than 180 days after the compliance date that is specified for your source in §63.7495 and according to the applicable provisions in §63.7(a)(2) as cited in Table 10 to this subpart.

(e) If your new or reconstructed affected source commenced construction or reconstruction between January 13, 2003 and [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must demonstrate initial compliance with either the proposed emission limits and work practice standards or the promulgated emission limits and work practice standards no later than 180 days after [INSERT THE DATE 180 DAYS AFTER PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or within 180 days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(f) If your new or reconstructed affected source commenced construction or reconstruction between January 13, 2003, and [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], and you chose to comply with the

proposed emission limits and work practice standards when demonstrating initial compliance, you must conduct a second compliance demonstration for the promulgated emission limits and work practice standards within 3 years after [INSERT THE DATE 3 YEARS AFTER PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or within 3 years after startup of the affected source, whichever is later.

(g) If your new or reconstructed affected source commences construction or reconstruction after [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must demonstrate initial compliance with the promulgated emission limits and work practice standards no later than 180 days after startup of the source.

<u>§63.7515 When must I conduct subsequent performance tests or fuel analyses?</u>

(a) You must conduct all applicable performance tests according to §63.7520 on an annual basis, unless you follow the requirements listed in paragraphs (b) through (d) of this section. Annual performance tests must be completed between 10 and 12 months after the previous performance test, unless you follow the requirements listed in paragraphs (b) through (d) of this section.

(b) You can conduct performance tests less often for a given pollutant if your performance tests for the pollutant

(particulate matter, HCl, mercury, or TSM) for at least 3 consecutive years show that you comply with the emission limit. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the third year and no more than 36 months after the previous performance test.

(c) If your boiler or process heater continues to meet the emission limit for particulate matter, HCl, mercury, or TSM, you may choose to conduct performance tests for these pollutants every third year, but each such performance test must be conducted no more than 36 months after the previous performance test.

(d) If a performance test shows noncompliance with an emission limit for particulate matter, HCl, mercury, or TSM, you must conduct annual performance tests for that pollutant until all performance tests over a consecutive 3-year period show compliance.

(e) If you have an applicable work practice standard for carbon monoxide and your boiler or process heater is in any of the limited use subcategories or has a heat input capacity less than 100 MMBtu per hour, you must conduct annual performance tests for carbon monoxide according to §63.7520. Each annual performance test must be conducted

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between 10 and 12 months after the previous performance test.

(f) You must conduct a fuel analysis according to §63.7521 for each type of fuel burned no later than 5 years after the previous fuel analysis for each fuel type. If you burn a new type of fuel, you must conduct a fuel analysis before burning the new type of fuel in your boiler or process heater. You must still meet all applicable continuous compliance requirements in §63.7540.

(g) You must report the results of performance tests and fuel analyses within 60 days after the completion of the performance tests or fuel analyses. This report should also verify that the operating limits for your affected source have not changed or provide documentation of revised operating parameters established according to §63.7530 and Table 7 to this subpart, as applicable. The reports for all subsequent performance tests and fuel analyses should include all applicable information required in §63.7550.

<u>§63.7520 What performance tests and procedures must I use?</u>

(a) You must conduct all performance tests according to §63.7(c), (d), (f), and (h). You must also develop a site-specific test plan according to the requirements in §63.7(c) if you elect to demonstrate compliance through performance testing.

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(b) You must conduct each performance test according to the requirements in Table 5 to this subpart.

(c) New or reconstructed boilers or process heaters in one of the liquid fuel subcategories that burn only fossil fuels and other gases and do not burn any residual oil must demonstrate compliance according to §63.7506(a).

(d) You must conduct each performance test under the specific conditions listed in Tables 5 and 7 to this subpart. You must conduct performance tests at the maximum normal operating load while burning the type of fuel or mixture of fuels that have the highest content of chlorine, mercury, and total selected metals, and you must demonstrate initial compliance and establish your operating limits based on these tests. These requirements could result in the need to conduct more than one performance test.

(e) You may not conduct performance tests during periods of startup, shutdown, or malfunction.

(f) You must conduct three separate test runs for each performance test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(g) To determine compliance with the emission limits, you must use the F-Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 of appendix A to part 60 of this chapter to convert the measured particulate

matter concentrations, the measured HCl concentrations, the measured TSM concentrations, and the measured mercury concentrations that result from the initial performance test to pounds per million Btu heat input emission rates using F-factors.

§63.7521 What fuel analyses and procedures must I use?

(a) You must conduct fuel analyses according to the procedures in paragraphs (b) through (e) of this section and Table 6 to this subpart, as applicable.

(b) You must develop and submit a site-specific fuel analysis plan to the EPA Administrator for review and approval according to the following procedures and requirements in paragraphs (b)(1) and (2) of this section.

(1) You must submit the fuel analysis plan no later than 180 days before the date that you intend to demonstrate compliance.

(2) You must include the information contained in paragraphs (b)(2)(i) through (vi) of this section in your fuel analysis plan.

(i) The identification of all fuel types anticipated to be burned in each boiler or process heater.

(ii) For each fuel type, the notification of whether you or a fuel supplier will be conducting the fuel analysis.

(iii) For each fuel type, a detailed description of

the sample location and specific procedures to be used for collecting and preparing the composite samples if your procedures are different from paragraph (c) or (d) of this section. Samples should be collected at a location that most accurately represents the fuel type, where possible, at a point prior to mixing with other dissimilar fuel types.

(iv) For each fuel type, the analytical methods, with the expected minimum detection levels, to be used for the measurement of selected total metals, chlorine, or mercury.

(v) If you request to use an alternative analytical method other than those required by Table 6 to this subpart, you must also include a detailed description of the methods and procedures that will be used.

(vi) If you will be using fuel analysis from a fuel supplier in lieu of site-specific sampling and analysis, the fuel supplier must use the analytical methods required by Table 6 to this subpart.

(c) At a minimum, you must obtain three composite fuel samples for each fuel type according to the procedures in paragraph (c)(1) or (2) of this section.

(1) If sampling from a belt (or screw) feeder, collect fuel samples according to paragraphs (c)(1)(i) and (ii) of this section.

(i) Stop the belt and withdraw a 6-inch wide sample

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from the full cross-section of the stopped belt to obtain a minimum two pounds of sample. Collect all the material (fines and coarse) in the full cross-section. Transfer the sample to a clean plastic bag.

(ii) Each composite sample will consist of a minimum of three samples collected at approximately equal intervals during the testing period.

(2) If sampling from a fuel pile or truck, collect fuel samples according to paragraphs (c)(2)(i) through (iii) of this section.

(i) For each composite sample, select a minimum of five sampling locations uniformly spaced over the surface of the pile.

(ii) At each sampling site, dig into the pile to a depth of 18 inches. Insert a clean flat square shovel into the hole and withdraw a sample, making sure that large pieces do not fall off during sampling.

(iii) Transfer all samples to a clean plastic bag for further processing.

(d) Prepare each composite sample according to the procedures in paragraphs (d)(1) through (7) of this section.

(1) Throughly mix and pour the entire composite sample over a clean plastic sheet.

(2) Break sample pieces larger than 3 inches into

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smaller sizes.

(3) Make a pie shape with the entire composite sample and subdivide it into four equal parts.

(4) Separate one of the quarter samples as the first subset.

(5) If this subset is too large for grinding, repeat the procedure in paragraph (d)(3) of this section with the quarter sample and obtain a one-quarter subset from this sample.

(6) Grind the sample in a mill.

(7) Use the procedure in paragraph (d)(3) of this section to obtain a one-quarter subsample for analysis. If the quarter sample is too large, subdivide it further using the same procedure.

(e) Determine the concentration of pollutants in the fuel (mercury, chlorine, and/or total selected metals) in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 6 to this subpart.

<u>§63.7522 Can I use emission averaging to comply with this subpart?</u>

(a) As an alternative to meeting the requirements of §63.7500, if you have more than one existing large solid fuel boiler located at your facility, you may demonstrate

compliance by emission averaging according to the procedures in this section in a State that does not choose to exclude emission averaging.

(b) For each existing large solid fuel boiler in the averaging group, the emission rate achieved during the initial compliance test for the HAP being averaged must not exceed the emission level that was being achieved on [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER] or the control technology employed during the initial compliance test must not be less effective for the HAP being averaged than the control technology employed on [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) You may average particulate matter or TSM, HCl, and mercury emissions from existing large solid fuel boilers to demonstrate compliance with the limits in Table 1 to this subpart if you satisfy the requirements in paragraphs (d), (e), and (f) of this section.

(d) The weighted average emissions from the existing large solid fuel boilers participating in the emissions averaging option must be in compliance with the limits in Table 1 to this subpart at all times following the compliance date specified in §63.7495.

(e) You must demonstrate initial compliance according

to paragraphs (e)(1) or (2).

(1) You must use equation 1 of this section to demonstrate that the particulate matter or TSM, HCl, and mercury emissions from all existing large solid fuel boilers participating in the emissions averaging option do not exceed the emission limits in Table 1 to this subpart.

$$AveWeightedEmissions = \sum_{i=1}^{n} (Er \times Hm) \div \sum_{i=1}^{n} Hm \qquad \text{(Eq. 1)}$$

Where:

AveWeighted Emissions	=	Average weighted emissions for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input;
Er	=	Emission rate (as calculated according to Table 5 to this subpart) or fuel analysis (as calculated by the applicable equation in §63.7530(d)) for boiler, i, for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input;
Hm	=	Maximum rated heat input capacity of boiler, i, in units of million Btu per hour;
n	=	Number of large solid fuel boilers participating in the emissions averaging option.

(2) If you are not capable of monitoring heat input, you can use equation 2 of this section as an alternative to

using equation 1 of this section to demonstrate that the particulate matter or TSM, HCl, and mercury emissions from all existing large solid fuel boilers participating in the emissions averaging option do not exceed the emission limits in Table 1 to this subpart.

$$AveWeightedEmissions = \sum_{i=1}^{n} (Er \times Sm \times Cf) \div \sum_{i=1}^{n} Sm \times Cf \qquad \text{(Eq. 2)}$$

Where:

AveWeighted Emissions	=	Average weighted emission level for PM or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Er	=	Emission rate (as calculated according to Table 5 to this subpart) or fuel analysis (as calculated by the applicable equation in §63.7530(d)) for boiler, i, for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Sm	=	Maximum steam generation by boiler, i, in units of pounds.
Cf	=	Conversion factor, calculated from the most recent compliance test, in units of million Btu of heat input per pounds of steam generated.

(f) You must demonstrate continuous compliance on a 12-month rolling average basis determined at the end of every month (12 times per year) according to paragraphs (f)(1) and

(2). The first 12-month rolling-average period begins on the compliance date specified in §63.7495.

(1) For each calendar month, you must use equation 3 of this section to calculate the 12-month rolling average weighted emission limit using the actual heat capacity for each existing large solid fuel boiler participating in the emissions averaging option.

$$AveWeightedEmissions = \sum_{i=1}^{n} (Er \times Hb) \div \sum_{i=1}^{n} Hb \qquad \text{(Eq. 3)}$$

Where:

AveWeighted Emissions	=	12-month rolling average weighted emission level for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Er	=	Emission rate, calculated during the most recent compliance test,(as calculated according to Table 5 to this subpart) or fuel analysis (as calculated by the applicable equation in §63.7530(d)) for boiler, i, for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Hb	=	The average heat input for each calendar month of boiler, i, in units of million Btu
n	=	Number of large solid fuel boilers participating in the emissions averaging option.

(2) If you are not capable of monitoring heat input,

you can use equation 4 of this section as an alternative to using equation 3 of this section to calculate the 12-month rolling average weighted emission limit using the actual steam generation from the large solid fuel boilers participating in the emissions averaging option.

$$AveWeightedEmissions = \sum_{i=1}^{n} (Er \times Sa \times Cf) \div \sum_{i=1}^{n} Sa \times Cf \qquad \text{(Eq. 4)}$$

Where:

AveWeighted Emissions	=	12-month rolling average weighted emission level for PM or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Er	=	Emission rate, calculated during the most recent compliance test(as calculated according to Table 5 to this subpart) or fuel analysis (as calculated by the applicable equation in §63.7530(d)) for boiler, i, for particulate matter or TSM, HCl, or mercury, in units of pounds per million Btu of heat input.
Sa	=	Actual steam generation for each calender month by boiler, i, in units of pounds.
Cf	=	Conversion factor, as calculated during the most recent compliance test,in units of million Btu of heat input per pounds of steam generated.

(g) You must develop and submit an implementation plan for emission averaging to the applicable regulatory

authority for review and approval according to the following procedures and requirements in paragraphs (f)(1) through (4).

(1) You must submit the implementation plan no later than 180 days before the date that the facility intends to demonstrate compliance using the emission averaging option.

(2) You must include the information contained in paragraphs (2)(i) through (vii) of this section in your implementation plan for all emission sources included in an emissions average:

(i) The identification of all existing large solid fuel boilers in the averaging group, including for each either the applicable HAP emission level or the control technology installed on;

(ii) The process parameter (heat input or steam generated) that will be monitored for each averaging group of large solid fuel boilers;

(iii) The specific control technology or pollution prevention measure to be used for each emission source in the averaging group and the date of its installation or application. If the pollution prevention measure reduces or eliminates emissions from multiple sources, the owner or operator must identify each source;

(iv) The test plan for the measurement of particulate

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matter (or TSM), HCl, or mercury emissions in accordance with the requirements in §63.7520;

(v) The operating parameters to be monitored for each control system or device and a description of how the operating limits will be determined;

(vi) If you request to monitor an alternative operating parameter pursuant to §63.7525, you must also include:

(A) A description of the parameter(s) to be monitored and an explanation of the criteria used to select the parameter(s); and

(B) A description of the methods and procedures that will be used to demonstrate that the parameter indicates proper operation of the control device; the frequency and content of monitoring, reporting, and recordkeeping requirements; and a demonstration, to the satisfaction of the applicable regulatory authority, that the proposed monitoring frequency is sufficient to represent control device operating conditions; and

(vii) A demonstration that compliance with each of the applicable emission limit(s) will be achieved under representative operating conditions.

(3) Upon receipt, the regulatory authority shall review and approve or disapprove the plan according to the

following criteria:

(i) Whether the content of the plan includes all of the information specified in paragraph (f)(2) of this section; and

(ii) Whether the plan presents sufficient information to determine that compliance will be achieved and maintained.

(4) The applicable regulatory authority shall not approve an emission averaging implementation plan containing any of the following provisions:

(i) Any averaging between emissions of differing pollutants or between differing sources; or

(ii) The inclusion of any emission source other than an existing large solid fuel boiler.

<u>§63.7525 What are my monitoring, installation, operation, and maintenance requirements?</u>

(a) If you have an applicable work practice standard for carbon monoxide, and your boiler or process heater is in any of the large subcategories and has a heat input capacity of 100 MMBtu per hour or greater, you must install, operate, and maintain a continuous emission monitoring system (CEMS) for carbon monoxide according to the procedures in paragraphs (a)(1) through (6) of this section by the compliance date specified in §63.7495.

(1) Each CEMS must be installed, operated, and maintained according to Performance Specification (PS) 4A of 40 CFR part 60, appendix B, and according to the site-specific monitoring plan developed according to §63.7505(d).

(2) You must conduct a performance evaluation of each CEMS according to the requirements in §63.8 and according to PS 4A of 40 CFR part 60, appendix B.

(3) Each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(4) The CEMS data must be reduced as specified in §63.8(g)(2).

(5) You must calculate and record a 30-day rolling average emission rate on a daily basis. A new 30-day rolling average emission rate is calculated as the average of all of the hourly CO emission data for the preceding 30 operating days.

(6) For purposes of calculating data averages, you must not use data recorded during periods of monitoring malfunctions, associated repairs, out-of-control periods, required quality assurance or control activities, or when your boiler or process heater is operating at less than 50 percent of its rated capacity. You must use all the data collected during all other periods in assessing compliance.

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Any period for which the monitoring system is out of control and data are not available for required calculations constitutes a deviation from the monitoring requirements.

(b) If you have an applicable opacity operating limit, you must install, operate, certify and maintain each continuous opacity monitoring system (COMS) according to the procedures in paragraphs (b)(1) through (7) of this section by the compliance date specified in §63.7495.

(1) Each COMS must be installed, operated, and maintained according to PS 1 of 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each COMS according to the requirements in §63.8 and according to PS 1 of 40 CFR part 60, appendix B.

(3) As specified in §63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(4) The COMS data must be reduced as specified in §63.8(g)(2).

(5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in §63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance

audit, and an annual zero alignment audit of each COMS.

(6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of §63.8(e). Identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance audit, or an annual zero alignment audit.

(7) You must determine and record all the 6-minute averages (and 1-hour block averages as applicable) collected for periods during which the COMS is not out of control.

(c) If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to the procedures in paragraphs (c)(1) through (5) of this section by the compliance date specified in §63.7495.

(1) The CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of four successive cycles of operation to have a valid hour of data.

(2) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must conduct all monitoring in continuous operation at all times that the

unit is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(3) For purposes of calculating data averages, you must not use data recorded during monitoring malfunctions, associated repairs, out of control periods, or required quality assurance or control activities. You must use all the data collected during all other periods in assessing compliance. Any period for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.

(4) Determine the 3-hour block average of all recorded readings, except as provided in paragraph (c)(3) of this section.

(5) Record the results of each inspection, calibration, and validation check.

(d) If you have an operating limit that requires the use of a flow measurement device, you must meet the requirements in paragraphs (c) and (d)(1) through (4) of this section.

(1) Locate the flow sensor and other necessary

equipment in a position that provides a representative flow.

(2) Use a flow sensor with a measurement sensitivity of 2 percent of the flow rate.

(3) Reduce swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(4) Conduct a flow sensor calibration check at least semiannually.

(e) If you have an operating limit that requires the use of a pressure measurement device, you must meet the requirements in paragraphs (c) and (e)(1) through (6) of this section.

(1) Locate the pressure sensor(s) in a position that provides a representative measurement of the pressure.

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a gauge with a minimum tolerance of 1.27 centimeters of water or a transducer with a minimum tolerance of 1 percent of the pressure range.

(4) Check pressure tap pluggage daily.

(5) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(6) Conduct calibration checks any time the sensor exceeds the manufacturer’s specified maximum operating pressure range or install a new pressure sensor.

(f) If you have an operating limit that requires the use of a pH measurement device, you must meet the requirements in paragraphs (c) and (f)(1) through (3) of this section.

(1) Locate the pH sensor in a position that provides a representative measurement of scrubber effluent pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(g) If you have an operating limit that requires the use of equipment to monitor voltage and secondary current (or total power input) of an electrostatic precipitator (ESP), you must use voltage and secondary current monitoring equipment to measure voltage and secondary current to the ESP.

(h) If you have an operating limit that requires the use of equipment to monitor sorbent injection rate (e.g., weigh belt, weigh hopper, or hopper flow measurement device), you must meet the requirements in paragraphs (c) and (h)(1) through (3) of this section.

(1) Locate the device in a position(s) that provides a representative measurement of the total sorbent injection rate.

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(2) Install and calibrate the device in accordance with manufacturer’s procedures and specifications.

(3) At least annually, calibrate the device in accordance with the manufacturer’s procedures and specifications.

(i) If you elect to use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (i)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer’s written specifications and recommendations and in accordance with the guidance provided in EPA-454/R-98-015, September 1997.

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped

with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(7) For positive pressure fabric filter systems that do not duct all compartments of cells to a common stack, a bag leak detection system must be installed in each baghouse compartment or cell.

(8) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

<u>§63.7530 How do I demonstrate initial compliance with the emission limits and work practice standards?</u>

(a) You must demonstrate initial compliance with each emission limit and work practice standard that applies to you by either conducting initial performance tests and establishing operating limits, as applicable, according to §63.7520, paragraph (c) of this section, and Tables 5, 7 and 8 to this subpart OR conducting initial fuel analyses to determine emission rates and establishing operating limits, as applicable, according to §63.7521, paragraph (d) of this

section, and Tables 6 and 8 to this subpart.

(b) New or reconstructed boilers or process heaters in one of the liquid fuel subcategories that burn only fossil fuels and other gases and do not burn any residual oil must demonstrate compliance according to §63.7506(a).

(c) If you demonstrate compliance through performance testing, you must establish each site-specific operating limit in Tables 2 through 4 to this subpart that applies to you according to the requirements in §63.7520, Table 7 to this subpart, and paragraph (c)(4) of this section, as applicable. You must also conduct fuel analyses according to §63.7521 and establish maximum fuel pollutant input levels according to paragraphs (c)(1) through (3) of this section, as applicable.

(1) You must establish the maximum chlorine fuel input (Cl_{input}) during the initial performance testing according to the procedures in paragraphs (c)(1)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of chlorine.

(ii) During the performance testing for HCl, you must determine the fraction of the total heat input for each fuel type burned (Q_i) based on the fuel mixture that has the

highest content of chlorine, and the average chlorine concentration of each fuel type burned ©$_i$).

(iii) You must establish a maximum chlorine input level using Equation 5 of this section.

$$Cl_{input} = \sum_{i=1}^{n} \left[(C_i)(Q_i) \right] \qquad \text{(Eq. 5)}$$

Where:

Cl_{input}	=	Maximum amount of chlorine entering the boiler or process heater through fuels burned in units of pounds per million Btu.
C_i	=	Arithmetic average concentration of chlorine in fuel type, i, analyzed according to §63.7521, in units of pounds per million Btu
Q_i	=	Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types during the performance testing, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i
n	=	Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine.

(2) If you choose to comply with the alternative TSM emission limit instead of the particulate matter emission limit, you must establish the maximum TSM fuel input level (TSM_{input}) during the initial performance testing according to the procedures in paragraphs (c)(2)(i) through (iii) of this section.

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(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of TSM.

(ii) During the performance testing for TSM, you must determine the fraction of total heat input from each fuel burned (Qi) based on the fuel mixture that has the highest content of total selected metals, and the average TSM concentration of each fuel type burned (Mi).

(iii) You must establish a baseline TSM input level using Equation 6 of this section.

$$TSM_{input} = \sum_{i=1}^{n} \left[(M_i)(Q_i) \right] \qquad \text{(Eq. 6)}$$

Where:

TSM_{input}	=	Maximum amount of TSM entering the boiler or process heater through fuels burned in units of pounds per million Btu;
M_i	=	Arithmetic average concentration of TSM in fuel type, i, analyzed according to §63.7521, in units of pound per million Btu;
Q_i	=	Fraction of total heat input from based fuel type, i, based on the fuel mixture that has the highest content of TSM. If you do not burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i;
n	=	Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of TSM.

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(3) You must establish the maximum mercury fuel input level ($Mercury_{input}$) during the initial performance testing using the procedures in paragraphs (c)(3)(i) through (iii) of this section.

(i) You must determine the fuel type or fuel mixture that you could burn in your boiler or process heater that has the highest content of mercury.

(ii) During the compliance demonstration for mercury, you must determine the fraction of total heat input for each fuel burned (Q_i) based on the fuel mixture that has the highest content of mercury, and the average mercury concentration of each fuel type burned (HG_i).

(iii) You must establish a maximum mercury input level using Equation 7 of this section.

$$Mercury_{input} = \sum_{i=1}^{n} \left[(HG_i)(Q_i) \right] \qquad \text{(Eq. 7)}$$

Where:

$Mercury_{input}$	=	Maximum amount of mercury entering the boiler or process heater through fuels burned in units of pounds per million Btu;
HG_i	=	Arithmetic average concentration of mercury in fuel type, i, analyzed according to §63.7521, in units of pound per million Btu;
Q_i	=	Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not

		burn multiple fuel types during the performance test, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i;
n	=	Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of mercury.

(4) You must establish parameter operating limits according to paragraphs (c)(4)(i) through (iv) of this section.

(i) For a wet scrubber, you must establish the minimum scrubber effluent pH, liquid flowrate, and pressure drop as defined in §63.7575, as your operating limits during the three-run performance test. If you use a wet scrubber and you conduct separate performance tests for particulate matter, HCl, and mercury emissions, you must establish one set of minimum scrubber effluent pH, liquid flowrate, and pressure drop operating limits. The minimum scrubber effluent pH operating limit must be established during the HCl performance test. If you conduct multiple performance tests, you must set the minimum liquid flowrate and pressure drop operating limits at the highest minimum values established during the performance tests.

(ii) For an electrostatic precipitator, you must establish the minimum voltage and secondary current (or total power input), as defined in §63.7575, as your

operating limits during the three-run performance test.

(iii) For a dry scrubber, you must establish the minimum sorbent injection rate, as defined in §63.7575, as your operating limit during the three-run performance test.

(iv) The operating limit for boilers or process heaters with fabric filters that choose to demonstrate continuous compliance through bag leak detection systems is that a bag leak detection system be installed according to the requirements in §63.7525, and that each fabric filter must be operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period.

(d) If you elect to demonstrate compliance with an applicable emission limit through fuel analysis, you must conduct fuel analyses according to §63.7521 and follow the procedures in paragraphs (d)(1) through (5) of this section.

(1) If you burn more than one fuel type, you must determine the fuel mixture you could burn in your boiler or process heater that would result in the maximum emission rates of the pollutants that you elect to demonstrate compliance through fuel analysis.

(2) You must determine the 90th percentile confidence level fuel pollutant concentration of the composite samples analyzed for each fuel type using the one-sided z-statistic

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test described in Equation 8 of this section.

$$P_{90} = \text{mean} + (SD * t) \qquad \text{(Eq. 8)}$$

Where:

P_{90} = 90th percentile confidence level pollutant concentration, in pounds per million Btu;

mean = Arithmetic average of the fuel pollutant concentration in the fuel samples analyzed according to §63.7521, in units of pounds per million Btu;

SD = Standard deviation of the pollutant concentration in the fuel samples analyzed according to §63.7521, in units of pounds per million Btu;

t = t distribution critical value for 90th percentile (0.1) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a Distribution Critical Value Table.

(3) To demonstrate compliance with the applicable emission limit for HCl, the HCl emission rate that you calculate for your boiler or process heater using Equation 9 of this section must be less than the applicable emission limit for HCl.

$$HCl = \sum_{i=1}^{n} \left[(C_{i90})\,(Q_i)\,(1.028) \right] \qquad \text{(Eq. 9)}$$

Where:

HCl = HCl emission rate from the boiler or process heater in units of pounds per million Btu;

C_{i90} = 90th percentile confidence level concentration of chlorine in fuel type, i, in

units of pounds per million Btu as calculated according to Equation 8 of this section;

Q_i = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of chlorine. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i;

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of chlorine;

1.028= Molecular weight ratio of HCl to chlorine.

(4) To demonstrate compliance with the applicable emission limit for TSM, the TSM emission rate that you calculate for your boiler or process heater using Equation 10 of this section must be less than the applicable emission limit for TSM.

$$TSM = \sum_{i=1}^{n} \left[(M_{i90})(Q_i) \right] \qquad \text{(Eq. 10)}$$

Where:

TSM = TSM emission rate from the boiler or process heater in units of pounds per million Btu;

M_{i90} = 90th percentile confidence level concentration of TSM in fuel, i, in units of pound per million Btu as calculated according to Equation 8 of this section;

Qi = Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest content of total selected metals. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i;

n = Number of different fuel types burned in your boiler or process heater for the mixture that has the highest content of TSM.

(5) To demonstrate compliance with the applicable

emission limit for mercury, the mercury emission rate that you calculate for your boiler or process heater using Equation 11 of this section must be less than the applicable emission limit for mercury.

$$\text{Mercury} = \sum_{i=1}^{n} \left[(HG_{i90})(Q_i) \right] \qquad \text{(Eq. 11)}$$

Where:

Mercury	=	Mercury emission rate from the boiler or process heater in units of pounds per million Btu;
HG_{i90}	=	90th percentile confidence level concentration of mercury in fuel, i, in units of pound per million Btu as calculated according to Equation 8 of this section;
Qi	=	Fraction of total heat input from fuel type, i, based on the fuel mixture that has the highest mercury content. If you do not burn multiple fuel types, it is not necessary to determine the value of this term. Insert a value of "1" for Q_i;
n	=	Number of different fuel types burned in your boiler or process heater for the mixture that has the highest mercury content.

(e) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.7545(e).

Continuous Compliance Requirements

<u>§63.7535 How do I monitor and collect data to demonstrate</u>

continuous compliance?

(a) You must monitor and collect data according to this section and the site-specific monitoring plan required by §63.7505(d).

(b) Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) at all times that the affected source is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, or required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system. Boilers and process heaters that have an applicable carbon monoxide work practice standard and are required to install and operate a CEMS, may not use data recorded during periods when the boiler or process heater is operating at less than 50 percent of its rated capacity.

§63.7540 How do I demonstrate continuous compliance with the emission limits and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit, operating limit, and work practice standard in Tables 1 through 4 to this subpart that applies to you according to the methods specified in Table 8 to this subpart and paragraphs (a)(1) through (10) of this section.

(1) Following the date on which the initial performance test is completed or is required to be completed under §§63.7 and 63.7510, whichever date comes first, you must not operate above any of the applicable maximum operating limits or below any of the applicable minimum operating limits listed in Tables 2 through 4 to this subpart at all times except during periods of startup, shutdown and malfunction. Operating limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating limits shall constitute a deviation of established operating limits.

(2) You must keep records of the type and amount of all fuels burned in each boiler or process heater during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would either result in lower emissions of TSM, HCl, and mercury, than the applicable emission limit for each pollutant (if you demonstrate compliance through fuel analysis), or result in lower fuel

input of TSM, chlorine, and mercury than the maximum values calculated during the last performance tests (if you demonstrate compliance through performance testing).

(3) If you demonstrate compliance with an applicable HCl emission limit through fuel analysis and you plan to burn a new type of fuel, you must recalculate the HCl emission rate using Equation 5 of §63.7530 according to paragraphs (a)(3)(i) through (iii) of this section.

(i) You must determine the chlorine concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to §63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of chlorine.

(iii) Recalculate the HCl emission rate from your boiler or process heater under these new conditions using Equation 5 of §63.7530. The recalculated HCl emission rate must be less than the applicable emission limit.

(4) If you demonstrate compliance with an applicable HCl emission limit through performance testing and you plan to burn a new type of fuel type or a new mixture of fuels, you must recalculate the maximum chlorine input using Equation 1 of §63.7530. If the results of recalculating the

maximum chlorine input using Equation 1 of §63.7530 are higher than the maximum chlorine input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in §63.7520 to demonstrate that the HCl emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in §63.7530(c).

(5) If you demonstrate compliance with an applicable TSM emission limit through fuel analysis, and you plan to burn a new type of fuel, you must recalculate the TSM emission rate using Equation 6 of §63.7530 according to the procedures specified in paragraphs (a)(5)(i) through (iii) of this section.

(i) You must determine the TSM concentration for any new fuel type in units of pounds per million Btu, based on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to §63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of TSM.

(iii) Recalculate the TSM emission rate from your boiler or process heater under these new conditions using

Equation 6 of §63.7530. The recalculated TSM emission rate must be less than the applicable emission limit.

(6) If you demonstrate compliance with an applicable TSM emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum TSM input using Equation 2 of §63.7530. If the results of recalculating the maximum total selected metals input using Equation 2 of §63.7530 are higher than the maximum TSM input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in §63.7520 to demonstrate that the TSM emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in §63.7530(c).

(7) If you demonstrate compliance with an applicable mercury emission limit through fuel analysis, and you plan to burn a new type of fuel, you must recalculate the mercury emission rate using Equation 7 of §63.7530 according to the procedures specified in paragraphs (a)(7)(i) through (iii) of this section.

(i) You must determine the mercury concentration for any new fuel type in units of pounds per million Btu, based

on supplier data or your own fuel analysis, according to the provisions in your site-specific fuel analysis plan developed according to §63.7521(b).

(ii) You must determine the new mixture of fuels that will have the highest content of mercury.

(iii) Recalculate the mercury emission rate from your boiler or process heater under these new conditions using Equation 7 of §63.7530. The recalculated mercury emission rate must be less than the applicable emission limit.

(8) If you demonstrate compliance with an applicable mercury emission limit through performance testing, and you plan to burn a new type of fuel or a new mixture of fuels, you must recalculate the maximum mercury input using Equation 3 of §63.7530. If the results of recalculating the maximum mercury input using Equation 3 of §63.7530 are higher than the maximum mercury input level established during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in §63.7520 to demonstrate that the mercury emissions do not exceed the emission limit. You must also establish new operating limits based on this performance test according to the procedures in §63.7530(c).

(9) If your unit is controlled with a fabric filter,

and you demonstrate continuous compliance using a bag leak detection system, you must initiate corrective action within 1 hour of a bag leak detection system alarm and complete corrective actions according to your SSMP, and operate and maintain the fabric filter system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. You must also keep records of the date, time, and duration of each alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of the operating time during each 6-month period that the alarm sounds. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken to initiate corrective action.

(10) If you have an applicable work practice standard for carbon monoxide, and you are required to install a CEMS according to §63.7525(a), then you must meet the requirements in paragraphs (a)(10)(i) through (iii) of this section.

(i) You must continuously monitor carbon monoxide according to §§63.7525(a) and 63.7535.

(ii) Maintain a carbon monoxide emission level below your applicable carbon monoxide work practice standard in Table 1 to this subpart at all times except during periods of startup, shutdown, malfunction, and when your boiler or process heater is operating at less than 50 percent of rated capacity.

(iii) Keep records of carbon monoxide levels according to §63.7555(b).

(b) You must report each instance in which you did not meet each emission limit, operating limit, and work practice standard in Tables 1 through 4 to this subpart that apply to you. You must also report each instance during a startup, shutdown, or malfunction when you did not meet each applicable emission limit, operating limit, and work practice standard. These instances are deviations from the emission limits and work practice standards in this subpart. These deviations must be reported according to the requirements in §63.7550.

(c) During periods of startup, shutdown, and malfunction, you must operate in accordance with the SSMP as required in §63.7505(e).

(d) Consistent with §§63.6(e)and 63.7(e)(1),

deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the EPA Administrator's satisfaction that you were operating in accordance with your SSMP. The EPA Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in §63.6(e).

§63.7541 How do I demonstrate continuous compliance under the emission averaging provision?

(a) Following the compliance date, the owner or operator must demonstrate compliance with this subpart on a continuous basis by meeting the requirements of paragraphs (a)(1) through (4) of this section.

(1) For each calendar month, demonstrate compliance with the average weighted emissions limit for the existing large solid fuel boilers participating in the emissions averaging option as determined in §63.7522(f) and (g);

(2) For each existing solid fuel boiler participating in the emissions averaging option that is equipped with a dry control system, maintain opacity at or below the applicable limit;

(3) For each existing solid fuel boiler participating in the emissions averaging option that is equipped with a wet scrubber, maintain the 3-hour average parameter values

at or below the operating limits established during the most recent performance test; and

(4) For each existing solid fuel boiler participating in the emissions averaging option that has an approved alternative operating plan, maintain the 3-hour average parameter values at or below the operating limits established in the most recent performance test.

(b) Any instance where the owner or operator fails to comply with the continuous monitoring requirements in paragraphs (a)(1) through (4) of this section, except during periods of startup, shutdown, and malfunction, is a deviation.

Notification, Reports, and Records

§63.7545 What notifications must I submit and when?

(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8 (e), (f)(4) and (6), and 63.9 (b) through (h) that apply to you by the dates specified.

(b) As specified in §63.9(b)(2), if you startup your affected source before [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 days after [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]. The Initial Notification must include the information required in paragraphs (b)(1) and (2) of this

section, as applicable.

(1) If your affected source has an annual capacity factor of greater than 10 percent, your Initial Notification must include the information required by §63.9(b)(2).

(2) If your affected source has a federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent such that the unit is in one of the limited use subcategories (the limited use solid fuel subcategory, the limited use liquid fuel subcategory, or the limited use gaseous fuel subcategory), your Initial Notification must include the information required by §63.9(b)(2) and also a signed statement indicating your affected source has a federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent.

(c) As specified in §63.9(b)(3), if you startup your new or reconstructed affected source on or after [INSERT THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 days after you become subject to this subpart. The Initial Notification must include the information required in paragraphs (c)(1) and (2) of this section, as applicable.

(1) If your affected source has an annual capacity factor of greater than 10 percent, your Initial Notification

must include the information required by §63.9(b).

(2) If your affected source has a federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent such that the unit is in one of the limited use subcategories, your Initial Notification must include the information required by §63.9(b) and a signed statement indicating your affected source has a federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent.

(d) If you are required to conduct a performance test you must submit a Notification of Intent to conduct a performance test at least 30 days before the performance test is scheduled to begin as required in §63.7(b)(1).

(e) If you are required to conduct an initial compliance demonstration as specified in §63.7530(a), you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii). For each initial compliance demonstration, you must submit the Notification of Compliance Status, including all performance test results and fuel analyses, before the close of business on the 60th day following the completion of the performance test and/or other initial compliance demonstrations according to §63.10(d)(2). The Notification of Compliance Status report must contain all the information specified in paragraphs (e)(1) through (9),

as applicable.

(1) A description of the affected source(s) including identification of which subcategory the source is in, the capacity of the source, a description of the add-on controls used on the source description of the fuel(s) burned, and justification for the fuel(s) burned during the performance test.

(2) Summary of the results of all performance tests, fuel analyses, and calculations conducted to demonstrate initial compliance including all established operating limits.

(3) Identification of whether you are complying with the particulate matter emission limit or the alternative total selected metals emission limit.

(4) Identification of whether you plan to demonstrate compliance with each applicable emission limit through performance testing or fuel analysis.

(5) Identification of whether you plan to demonstrate compliance by emissions averaging.

(6) A signed certification that you have met all applicable emission limits and work practice standards.

(7) A summary of the carbon monoxide emissions monitoring data and the maximum carbon monoxide emission levels recorded during the performance test to show that you

have met any applicable work practice standard in Table 1 to this subpart.

(8) If your new or reconstructed boiler or process heater is in one of the liquid fuel subcategories and burns only liquid fossil fuels other than residual oil either alone or in combination with gaseous fuels, you must submit a signed statement certifying this in your Notification of Compliance Status report.

(9) If you had a deviation from any emission limit or work practice standard, you must also submit a description of the deviation, the duration of the deviation, and the corrective action taken in the Notification of Compliance Status report.

§63.7550 What reports must I submit and when?

(a) You must submit each report in Table 9 to this subpart that applies to you.

(b) Unless the EPA Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report by the date in Table 9 to this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.7495 and ending on June 30 or

December 31, whichever date is the first date that occurs at least 180 days after the compliance date that is specified for your source in §63.7495.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.7495.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1)

through (4) of this section.

(c) The compliance report must contain the information required in paragraphs (c)(1) through (11) of this section.

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) The total fuel use by each affected source subject to an emission limit, for each calendar month within the semiannual reporting period, including, but not limited to, a description of the fuel and the total fuel usage amount with units of measure.

(5) A summary of the results of the annual performance tests and documentation of any operating limits that were reestablished during this test, if applicable.

(6) A signed statement indicating that you burned no new types of fuel. Or, if you did burn a new type of fuel, you must submit the calculation of chlorine input, using Equation 1 of §63.7530, that demonstrates that your source is still within its maximum chlorine input level established during the previous performance testing (for sources that demonstrate compliance through performance testing) or you

must submit the calculation of HCl emission rate using Equation 5 of §63.7530 that demonstrates that your source is still meeting the emission limit for HCl emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel, you must submit the calculation of TSM input, using Equation 2 of §63.7530, that demonstrates that your source is still within its maximum TSM input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of TSM emission rate using Equation 6 of §63.7530 that demonstrates that your source is still meeting the emission limit for TSM emissions (for boilers or process heaters that demonstrate compliance through fuel analysis). If you burned a new type of fuel, you must submit the calculation of mercury input, using Equation 3 of §63.7530, that demonstrates that your source is still within its maximum mercury input level established during the previous performance testing (for sources that demonstrate compliance through performance testing), or you must submit the calculation of mercury emission rate using Equation 7 of §63.7530 that demonstrates that your source is still meeting the emission limit for mercury emissions (for boilers or process heaters that demonstrate compliance through fuel

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analysis).

(7) If you wish to burn a new type of fuel and you can not demonstrate compliance with the maximum chlorine input operating limit using Equation 1 of §63.7530, the maximum TSM input operating limit using Equation 2 of §63.7530, or the maximum mercury input operating limit using Equation 3 of §63.7530, you must include in the compliance report a statement indicating the intent to conduct a new performance test within 60 days of starting to burn the new fuel.

(8) The hours of operation for each boiler and process heater that is subject to an emission limit for each calendar month within the semiannual reporting period. This requirement applies only to limited use boilers and process heaters.

(9) If you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your SSMP, the compliance report must include the information in §63.10(d)(5)(i).

(10) If there are no deviations from any emission limits or operating limits in this subpart that apply to you, and there are no deviations from the requirements for work practice standards in this subpart, a statement that there were no deviations from the emission limits, operating limits, or work practice standards during the reporting

period.

(11) If there were no periods during which the CMSs, including CEMS, COMS, and CPMS, were out of control as specified in §63.8(c)(7), a statement that there were no periods during which the CMSs were out of control during the reporting period.

(d) For each deviation from an emission limit or operating limit in this subpart and for each deviation from the requirements for work practice standards in this subpart that occurs at an affected source where you are not using a CMSs to comply with that emission limit, operating limit, or work practice standard, the compliance report must contain the information in paragraphs (c)(1) through (10) of this section and the information required in paragraphs (d)(1) through (4) of this section. This includes periods of startup, shutdown, and malfunction.

(1) The total operating time of each affected source during the reporting period.

(2) A description of the deviation and which emission limit, operating limit, or work practice standard from which you deviated.

(3) Information on the number, duration, and cause of deviations (including unknown cause), as applicable, and the corrective action taken.

(4) A copy of the test report if the annual performance test showed a deviation from the emission limit for particulate matter or the alternative TSM limit, a deviation from the HCl emission limit, or a deviation from the mercury emission limit.

(e) For each deviation from an emission limitation and operating limit or work practice standard in this subpart occurring at an affected source where you are using a CMS to comply with that emission limit, operating limit, or work practice standard, you must include the information in paragraphs (c)(1) through (10) of this section and the information required in paragraphs (e)(1) through (12) of this section. This includes periods of startup, shutdown, and malfunction and any deviations from your site-specific monitoring plan as required in §63.7505(d).

(1) The date and time that each malfunction started and stopped and description of the nature of the deviation (i.e., what you deviated from).

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out of control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period

of startup, shutdown, or malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMSs downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(8) An identification of each parameter that was monitored at the affected source for which there was a deviation, including opacity, carbon monoxide, and operating parameters for wet scrubbers and other control devices.

(9) A brief description of the source for which there was a deviation.

(10) A brief description of each CMS for which there was a deviation.

(11) The date of the latest CMS certification or audit

for the system for which there was a deviation.

(12) A description of any changes in CMSs, processes, or controls since the last reporting period for the source for which there was a deviation.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 40 CFR part 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to Table 9 to this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you operate a new gaseous fuel unit that is subject to the work practice standard specified in Table 1

to this subpart, and you intend to use a fuel other than natural gas or equivalent to fire the affected unit, you must submit a notification of alternative fuel use within 48 hours of the declaration of a period of natural gas curtailment or supply interruption, as defined in §63.7575. The notification must include the information specified in paragraphs (g)(1) through (5) of this section.

(1) Company name and address.

(2) Identification of the affected unit.

(3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.

(4) Type of alternative fuel that you intend to use.

(5) Dates when the alternative fuel use is expected to begin and end.

§63.7555 What records must I keep?

(a) You must keep records according to paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in

§63.10(b)(2)(xiv).

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, fuel analyses, or other compliance demonstrations, performance evaluations, and opacity observations as required in §63.10(b)(2)(viii).

(b) For each CEMS, CPMS, and COMS, you must keep records according to paragraphs (b)(1) through (5) of this section.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Monitoring data for continuous opacity monitoring system during a performance evaluation as required in §63.6(h)(7)(i) and (ii).

(3) Previous (i.e., superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(4) Request for alternatives to relative accuracy test for CEMS as required in §63.8(f)(6)(i).

(5) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required in Table 8 to this subpart including records of all monitoring data and

calculated averages for applicable operating limits such as opacity, pressure drop, carbon monoxide, and pH to show continuous compliance with each emission limit, operating limit, and work practice standard that applies to you.

(d) For each boiler or process heater subject to an emission limit, you must also keep the records in paragraphs (d)(1) through (5) of this section.

(1) You must keep records of monthly fuel use by each boiler or process heater, including the type(s) of fuel and amount(s) used.

(2) You must keep records of monthly hours of operation by each boiler or process heater. This requirement applies only to limited-use boilers and process heaters.

(3) A copy of all calculations and supporting documentation of maximum chlorine fuel input, using Equation 1 of §63.7530, that were done to demonstrate continuous compliance with the HCl emission limit, for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of HCl emission rates, using Equation 5 of §63.7530, that were done to demonstrate compliance with the HCl emission limit. Supporting documentation should include results of any fuel

analyses and basis for the estimates of maximum chlorine fuel input or HCl emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate chlorine fuel input, or HCl emission rate, for each boiler and process heater.

(4) A copy of all calculations and supporting documentation of maximum TSM fuel input, using Equation 2 of §63.7530, that were done to demonstrate continuous compliance with the TSM emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of TSM emission rates, using Equation 6 of §63.7530, that were done to demonstrate compliance with the TSM emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum TSM fuel input or TSM emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate TSM fuel input, or TSM emission rates, for each boiler and process heater.

(5) A copy of all calculations and supporting documentation of maximum mercury fuel input, using Equation

3 of §63.7530, that were done to demonstrate continuous compliance with the mercury emission limit for sources that demonstrate compliance through performance testing. For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation of mercury emission rates, using Equation 7 of §63.7530, that were done to demonstrate compliance with the mercury emission limit. Supporting documentation should include results of any fuel analyses and basis for the estimates of maximum mercury fuel input or mercury emission rates. You can use the results from one fuel analysis for multiple boilers and process heaters provided they are all burning the same fuel type. However, you must calculate mercury fuel input, or mercury emission rates, for each boiler and process heater.

(e) If your boiler or process heater is subject to an emission limit or work practice standard in Table 1 to this subpart and has a federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent such that the unit is in one of the limited use subcategories, you must keep the records in paragraphs (e)(1) and (2) of this section.

(1) A copy of the federally enforceable permit that limits the annual capacity factor of the source to less than

or equal to 10 percent.

(2) Fuel use records for the days the boiler or process heater was operating.

§63.7560 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records off site for the remaining 3 years.

Other Requirements and Information

§63.7565 What parts of the General Provisions apply to me?

Table 10 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§63.7570 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has

delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities listed in paragraphs (b)(1) through (5) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency, however, the U.S. EPA retains oversight of this subpart and can take enforcement actions, as appropriate.

(1) Approval of alternatives to the non-opacity emission limits and work practice standards in §63.7500(a) through (c) under §63.6(g).

(2) Approval of alternative opacity emission limits in §63.7500(a) under §63.6(h)(9).

(3) Approval of major change to test methods in Table 5 to this subpart under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(4) Approval of major change to monitoring under §63.8(f) and as defined in §63.90.

(5) Approval of major change to recordkeeping and

reporting under §63.10(f) and as defined in §63.90.

§63.7575 What definitions apply to this subpart?

Terms used in this subpart are defined in the CAA, in §63.2 (the General Provisions), and in this section as follows:

Annual capacity factor means the ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year, and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Biomass fuel means unadulterated wood as defined in this subpart, wood residue, and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sanderdust, chips, scraps, slabs, millings, and shavings); animal litter; vegetative agricultural and silvicultural materials,

such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds.

Blast furnace gas fuel-fired boiler or process heater means an industrial/commercial/institutional boiler or process heater that receives 90 percent or more of its total heat input (based on an annual average) from blast furnace gas.

Boiler means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water. Waste heat boilers are excluded from this definition.

Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by the American Society for Testing and Materials in ASTM D388-99e1, "Standard Specification for Classification of Coals by Rank," coal refuse, and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat including but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures, for the purposes of this subpart. Coal derived gases are excluded from this definition.

Coal refuse means any by-product of coal mining or coal

cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial/institutional boiler means a boiler used in commercial establishments or institutional establishments such as medical centers, research centers, institutions of higher education, hotels, and laundries to provide electricity, steam, and/or hot water.

Construction/demolition material means waste building material that result from the construction or demolition operations on houses and commercial and industrial buildings.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

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(3) Fails to meet any emission limit, operating limit, or work practice standard in this subpart during startup, shutdown, or malfunction, regardless or whether or not such failure is permitted by this subpart.

A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

Distillate oil means fuel oils, including recycled oils, that comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D396-02a, "Standard Specifications for Fuel Oils."

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems in fluidized bed boilers and process heaters are included in this definition.

Electric utility steam generating unit means a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its

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potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit.

Electrostatic precipitator means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Federally enforceable means all limitations and conditions that are enforceable by the EPA Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Firetube boiler means a boiler in which hot gases of combustion pass through the tubes and water contacts the outside surfaces of the tubes.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, subbituminous coal,

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lignite, anthracite, biomass, construction/demolition material, salt water laden wood, creosote treated wood, tires, residual oil. Individual fuel types received from different suppliers are not considered new fuel types except for construction/demolition material.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials.

Gaseous fuel includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, and biogas. Blast furnace gas is exempted from this definition.

Heat input means heat derived from combustion of fuel in a boiler or process heater and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns, etc.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous or liquid fuel and is withdrawn for use external to the vessel at pressures not exceeding 160 psig, including the apparatus by which the heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C).

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Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Large gaseous fuel subcategory includes any watertube boiler or process heater that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment or gas supply emergencies, has a rated capacity of greater than 10 MMBtu per hour heat input, and has an annual capacity factor of greater than 10 percent.

Large liquid fuel subcategory includes any watertube boiler or process heater that does not burn any solid fuel and burns any liquid fuel either alone or in combination with gaseous fuels, has a rated capacity of greater than 10 MMBtu per hour heat input, and has an annual capacity factor of greater than 10 percent. Large gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply emergencies are not included in this definition.

Large solid fuel subcategory includes any watertube boiler or process heater that burns any amount of solid fuel either alone or in combination with liquid or gaseous fuels, has a rated capacity of greater than 10 MMBtu per hour heat input, and has an annual capacity factor of greater than 10

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percent.

Liquid fossil fuel means petroleum, distillate oil, residual oil and any form of liquid fuel derived from such material.

Liquid fuel includes, but is not limited to, distillate oil, residual oil, waste oil, and process liquids.

Limited use gaseous fuel subcategory includes any watertube boiler or process heater that burns gaseous fuels not combined with any liquid or solid fuels, burns liquid fuel only during periods of gas curtailment or gas supply emergencies, has a rated capacity of greater than 10 MMBtu per hour heat input, and has a federally enforceable annual average capacity factor of equal to or less than 10 percent.

Limited use liquid fuel subcategory includes any watertube boiler or process heater that does not burn any solid fuel and burns any liquid fuel either alone or in combination with gaseous fuels, has a rated capacity of greater than 10 MMBtu per hour heat input, and has a federally enforceable annual average capacity factor of equal to or less than 10 percent. Limited use gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply emergencies are not included in this definition.

Limited use solid fuel subcategory includes any

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watertube boiler or process heater that burns any amount of solid fuel either alone or in combination with liquid or gaseous fuels, has a rated capacity of greater than 10 MMBtu per hour heat input, and has a federally enforceable annual average capacity factor of equal to or less than 10 percent.

Minimum pressure drop means 90 percent of the lowest test-run average pressure drop measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum scrubber effluent pH means 90 percent of the lowest test-run average effluent pH measured at the outlet of the wet scrubber according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable hydrogen chloride emission limit.

Minimum scrubber flow rate means 90 percent of the lowest test-run average flow rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limit.

Minimum sorbent flow rate means 90 percent of the lowest test-run average sorbent (or activated carbon) flow rate measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance

with the applicable emission limits.

Minimum voltage or amperage means 90 percent of the lowest test-run average voltage or amperage to the electrostatic precipitator measured according to Table 7 to this subpart during the most recent performance test demonstrating compliance with the applicable emission limits.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835-03a, "Standard Specification for Liquid Petroleum Gases."

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an alternative method.

Period of natural gas curtailment or supply interruption means a period of time during which the supply

of natural gas to an affected facility is halted for reasons beyond the control of the facility. An increase in the cost or unit price of natural gas does not constitute a period of natural gas curtailment or supply interruption.

Process heater means an enclosed device using controlled flame, that is not a boiler, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not directly come into contact with process materials. Process heaters do not include units used for comfort heat or space heat, food preparation for on-site consumption, or autoclaves.

Residual oil means crude oil, and all fuel oil numbers 4, 5 and 6, as defined by the American Society for Testing and Materials in ASTM D396-02a, "Standard Specifications for Fuel Oils."

Responsible official means responsible official as defined in 40 CFR 70.2.

Small gaseous fuel subcategory includes any firetube boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment or gas supply emergencies, and any boiler or

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process heater that burns gaseous fuels not combined with any solid fuels, burns liquid fuel only during periods of gas curtailment or gas supply emergencies, and has a rated capacity of less than or equal to 10 MMBtu per hour heat input.

Small liquid fuel subcategory includes any firetube boiler that does not burn any solid fuel and burns any liquid fuel either alone or in combination with gaseous fuels, and any boiler or process heater that does not burn any solid fuel and burns any liquid fuel either alone or in combination with gaseous fuels, and has a rated capacity of less than or equal to 10 MMBtu per hour heat input. Small gaseous fuel boilers and process heaters that burn liquid fuel during periods of gas curtailment or gas supply emergencies are not included in this definition.

Small solid fuel subcategory includes any firetube boiler that burns any amount of solid fuel either alone or in combination with liquid or gaseous fuels, and any other boiler or process heater that burns any amount of solid fuel either alone or in combination with liquid or gaseous fuels and has a rated capacity of less than or equal to 10 MMBtu per hour heat input.

Solid fuel includes, but is not limited to, coal, wood, biomass, tires, plastics, and other nonfossil solid

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materials.

Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another. A temporary boiler that remains at a location for more than 180 consecutive days is no longer considered to be a temporary boiler. Any temporary boiler that replaces a temporary boiler at a location and is intended to perform the same or similar function will be included in calculating the consecutive time period.

Total selected metals means the combination of the following metallic HAP: arsenic, beryllium, cadmium, chromium, lead, manganese, nickel and selenium.

Unadulterated wood means wood or wood products that have not been painted, pigment-stained, or pressure treated with compounds such as chromate copper arsenate, pentachlorophenol, and creosote. Plywood, particle board, oriented strand board, and other types of wood products bound by glues and resins are included in this definition.

Watertube boiler means a boiler in which water passes through the tubes and hot gases of combustion pass over the outside surfaces of the tubes.

Waste heat boiler means a device that recovers normally unused energy and converts it to usable heat. Waste heat

boilers incorporating duct or supplemental burners that are designed to supply 50 percent or more of the total rated heat input capacity of the waste heat boiler are not considered waste heat boilers, but are considered boilers. Waste heat boilers are also referred to as heat recovery steam generators.

Wet scrubber means any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler or process heater to control emissions of particulate matter and/or to absorb and neutralize acid gases, such as hydrogen chloride.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

Tables to Subpart DDDDD of Part 63

Table 1 to Subpart DDDDD of Part 63 — Emission Limits and Work Practice Standards

As stated in §63.7500, you must comply with the following applicable emission limits:

If your boiler or process heater is in this subcategory...	**For the following pollutants...**	**You must meet the following emission limits and work practice standards...**
1. New or reconstructed large	a. Particulate Matter (OR	0.025 lb per MMBtu of heat input; or

solid fuel	Total Selected Metals) b. Hydrogen Chloride c. Mercury d. Carbon Monoxide	(0.0003 lb per MMBtu/hr of heat input) 0.02 lb per MMBtu of heat input 0.000003 lb per MMBtu of heat input 400 ppm by volume on a dry basis corrected to 7 percent oxygen (30-day rolling average for units 100 MMBtu/hr or greater, 3-run average for units less than 100 MMBtu/hr)
2. New or reconstructed limited use solid fuel	a. Particulate Matter (OR Total Selected Metals) b. Hydrogen Chloride c. Mercury d. Carbon Monoxide	0.025 lb per MMBtu of heat input; or (0.0003 lb per MMBtu/hr of heat input) 0.02 lb per MMBtu of heat input 0.000003 lb per MMBtu of heat input 400 ppm by volume on a dry basis corrected to 7 percent oxygen (3-run average)
3. New or reconstructed small solid fuel	a. Particulate Matter (OR Total Selected Metals) b. Hydrogen Chloride c. Mercury	0.025 lb per MMBtu of heat input; or (0.0003 lb per MMBtu/hr of heat input) 0.02 lb per MMBtu of heat input 0.000003 lb per MMBtu of heat input

4. New or reconstructed large liquid fuel	a. Particulate Matter b. Hydrogen Chloride c. Carbon Monoxide	0.03 lb per MMBtu of heat input 0.0005 lb per MMBtu of heat input 400 ppm by volume on a dry basis corrected to 3 percent oxygen (30-day rolling average for units 100 MMBtu/hr or greater, 3-run average for units less than 100 MMBtu/hr)
5. New or reconstructed limited use liquid fuel	a. Particulate Matter b. Hydrogen Chloride c. Carbon Monoxide	0.03 lb per MMBtu of heat input 0.0009 lb per MMBtu of heat input 400 ppm by volume on a dry basis corrected to 3 percent oxygen (3-run average)
6. New or reconstructed small liquid fuel	a. Particulate Matter b. Hydrogen Chloride	0.03 lb per MMBtu of heat input 0.0009 lb per MMBtu of heat input
7. New or reconstructed large gaseous fuel	Carbon Monoxide	400 ppm by volume on a dry basis corrected to 3 percent oxygen (30-day rolling average for units 100 MMBtu/hr or greater, 3-run average for units less than 100 MMBtu/hr)
8. New or reconstructed limited use gaseous fuel	Carbon Monoxide	400 ppm by volume on a dry basis corrected to 3 percent oxygen (3-run average)

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9. Existing large solid fuel	a. Particulate Matter (OR Total Selected Metals) b. Hydrogen Chloride c. Mercury	0.07 lb per MMBtu of heat input (0.001 lb per MMBtu/hr of heat input) 0.09 lb per MMBtu of heat input 0.000009 lb per MMBtu of heat input
10. Existing limited use solid fuel	Particulate Matter (OR Total Selected Metals)	0.21 lb per MMBtu of heat input (0.004 lb per MMBtu/hr of heat input)

Table 2 to Subpart DDDDD of Part 63 — Operating Limits for Boilers and Process Heaters with Particulate Matter Emission Limits

As stated in §63.7500, you must comply with the applicable operating limits:

If you demonstrate compliance with applicable particulate matter emission limits using...	**You must meet these operating limits...**
1. Wet scrubber control	a. Maintain the minimum pressure drop and liquid flow-rate at or above the operating levels established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limit for particulate matter.
2. Fabric filter control	a. Install and operate a bag leak detection system

	according to §63.7525 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during each 6-month period; OR b. This option is for boilers and process heaters that operate dry control systems. Existing boilers and process heaters must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).
3. Electrostatic precipitator control	a. This option is for boilers and process heaters that operate dry control systems. Existing boilers and process heaters must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).; OR

	b. This option is only for boilers and process heaters that operate additional wet control systems. Maintain the minimum voltage and secondary current or total power input of the electrostatic precipitator at or above the operating limits established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limit for particulate matter.
4. Any other control type	This option is for boilers and process heaters that operate dry control systems. Existing boilers and process heaters must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New boilers and process heaters must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).

Table 3 to Subpart DDDDD of Part 63 — Operating Limits for Boilers and Process Heaters With Mercury Emission Limits and Boilers and Process Heaters That Choose to Comply With the Alternative Total Selected Metals Emission Limits

As stated in §63.7500, you must comply with the applicable operating limits:

If you demonstrate compliance with applicable mercury and/or total selected metals emission limits using...	**You must meet these operating limits...**
1. Wet scrubber control	Maintain the minimum pressure drop and liquid flow-rate at or above the operating levels established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limits for mercury and/or total selected metals.
2. Fabric filter control	a. Install and operate a bag leak detection system according to §63.7525 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period; OR b. This option is for boilers and process heaters that operate dry control systems. Existing sources must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New sources must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).
3. Electrostatic precipitator control	a. This option is for boilers and process

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	heaters that operate dry control systems. Existing sources must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New sources must maintain opacity to less than or equal to 10 percent opacity (1-hour block average); OR b. This option is only for boilers and process heaters that operate additional wet control systems. Maintain the minimum voltage and secondary current or total power input of the electrostatic precipitator at or above the operating limits established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limits for mercury and/or total selected metals.
4. Dry scrubber or carbon injection control	Maintain the minimum sorbent or carbon injection rate at or above the operating levels established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limit for mercury.

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5. Any other control type	This option is only for boilers and process heaters that operate dry control systems. Existing sources must maintain opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent. New sources must maintain opacity to less than or equal to 10 percent opacity (1-hour block average).
6. Fuel analysis	Maintain the fuel type or fuel mixture such that the mercury and/or total selected metals emission rates calculated according to §63.7530(d)(4) and/or (5) is less than the applicable emission limits for mercury and/or total selected metals.

Table 4 to Subpart DDDDD of Part 63 — Operating Limits for Boilers and Process Heaters with Hydrogen Chloride Emission Limits

As stated in §63.7500, you must comply with the following applicable operating limits:

If you demonstrate compliance with applicable hydrogen chloride emission limits using...	**You must meet these operating limits...**

1. Wet scrubber control	Maintain the minimum scrubber effluent pH, pressure drop, and liquid flow-rate at or above the operating levels established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limit for hydrogen chloride.
2. Dry scrubber control	Maintain the minimum sorbent injection rate at or above the operating levels established during the performance test according to §63.7530(c) and Table 7 to this subpart that demonstrated compliance with the applicable emission limit for hydrogen chloride.
3. Fuel analysis	Maintain the fuel type or fuel mixture such that the hydrogen chloride emission rate calculated according to §63.7530(d)(3) is less than the applicable emission limit for hydrogen chloride.

Table 5 to Subpart DDDDD of Part 63 — Performance Testing Requirements

As stated in §63.7520, you must comply with the following requirements for performance test for existing, new or reconstructed affected sources:

To conduct a performance test for the following pollutant...	**You must...**	**Using...**
1. Particulate Matter	a. Select sampling ports location and the number of	Method 1 in appendix A to part 60 of this chapter.

	traverse points. b. Determine velocity and volumetric flow-rate of the stack gas. c. Determine oxygen and carbon dioxide concentrations of the stack gas. d. Measure the moisture content of the stack gas e. Measure the particulate matter emission concentration f. Convert emissions concentration to lb per MMBtu emission rates.	Method 2, 2F, or 2G in appendix A to part 60 of this chapter. Method 3A or 3B in appendix A to part 60 of this chapter or ASME PTC 19, Part 10(1981). Method 4 in appendix A to part 60 of this chapter. Method 5 or 17 (positive pressure fabric filters must use Method 5D) in appendix A to part 60 of this chapter. Method 19 F-factor methodology in appendix A to part 60 of this chapter.
2. Total selected metals	a. Select sampling ports location and the number of traverse points. b. Determine velocity and volumetric flow-rate of the stack gas. c. Determine oxygen and carbon dioxide	Method 1 in appendix A to part 60 of this chapter. Method 2, 2F, or 2G in appendix A to part 60 of this chapter. Method 3A or 3B in appendix A to part 60 of this chapter

	concentrations of the stack gas.	or ASME PTC 19, Part 10(1981).
	d. Measure the moisture content of the stack gas	Method 4 in appendix A to part 60 of this chapter.
	e. Measure the total selected metals emission concentration	Method 29 in appendix A to part 60 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates.	Method 19 F-factor methodology in appendix A to part 60 of this chapter.

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3. Hydrogen chloride	a. Select sampling ports location and the number of traverse points.	Method 1 in appendix A to part 60 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas.	Method 2, 2F, or 2G in appendix A to part 60 of this chapter.
	c. Determine oxygen and carbon dioxide concentrations of the stack gas.	Method 3A or 3B in appendix A to part 60 of this chapter or ASME PTC 19, Part 10(1981).
	d. Measure the moisture content of the stack gas	Method 4 in appendix A to part 60 of this chapter.
	e. Measure the hydrogen chloride emission concentration	Method 26 or 26A in appendix A to part 60 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates.	Method 19 F-factor methodology in appendix A to part 60 of this chapter.

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4. Mercury	a. Select sampling ports location and the number of traverse points.	Method 1 in appendix A to part 60 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas.	Method 2, 2F, or 2G in appendix A to part 60 of this chapter.
	c. Determine oxygen and carbon dioxide concentrations of the stack gas.	Method 3A or 3B in appendix A to part 60 of this chapter or ASME PTC 19, Part 10(1981).
	d. Measure the moisture content of the stack gas	Method 4 in appendix A to part 60 of this chapter.
	e. Measure the mercury emission concentration	Method 29 in appendix A to part 60 of this chapter or Method 101A in appendix B to part 61 of this chapter or ASTM Method D6784-02.
	f. Convert emissions concentration to lb per MMBtu emission rates.	Method 19 F-factor methodology in appendix A to part 60 of this chapter.

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5. Carbon Monoxide	a. Select the sampling ports location and the number of traverse points.	Method 1 in appendix A to part 60 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas.	Method 2, 2F, or 2G in appendix A to part 60 of this chapter.
	c. Determine oxygen and carbon dioxide concentrations of the stack gas.	Method 3A or 3B in appendix A to part 60 of this chapter or ASME PTC 19, Part 10(1981).
	d. Measure the moisture content of the stack gas.	Method 4 in appendix A to part 60 of this chapter.
	e. Measure the carbon monoxide emission concentration.	Method 10, 10A, or 10 B in appendix A to part 60 of this chapter.
	f. Convert emissions concentration to lb per MMBtu emission rates.	Method 19 F-factor methodology in appendix A to part 60 of this chapter.

Table 6 to Subpart DDDDD of Part 63 — Fuel Analysis Requirements

As stated in §63.7521, you must comply with the following requirements for fuel analysis testing for existing, new or reconstructed affected sources:

To conduct a fuel analysis for the following pollutant...	**You must...**	**Using...**
1. Mercury	a. Collect fuel	Procedure in

	samples.	§63.7521(c) or ASTM D2234M-03 (for coal) or ASTM D6323-98 (2003) (for biomass) or equivalent.
	b. Composite fuel samples.	Procedure in §63.7521(d) or equivalent.
	c. Prepare composited fuel samples.	SW-846-3050B (for solid samples) or SW-846-3020A (for liquid samples) or ASTM D2013-01 (for coal) or ASTM D5198-92 (2003) (for biomass) or equivalent.
	d. Determine heat content of the fuel type.	ASTM D5865-03a (for coal) or ASTM E711-87 (1996) (for biomass) or equivalent.
	e. Determine moisture content of the fuel type.	ASTM D3173-02 or ASTM E871-82 (1998) or equivalent.
	f. Measure mercury concentration in fuel sample.	ASTM D3684-01 (for coal) or SW-846-7471A (for solid samples) or SW-846 7470A (for liquid samples).
	g. Convert concentrations in into units of pounds of pollutant per MMBtu of heat content.	

2. Total selected metals	a. Collect fuel samples.	Procedure in §63.7521(c) or ASTM D2234M-03 (for coal) or ASTM D6323-98 (2003) (for biomass) or equivalent.
	b. Composite fuel samples.	Procedure in §63.7521(d) or equivalent.
	c. Prepare composited fuel samples	SW-846-3050B (for solid samples) or SW-846-3020A (for liquid samples) or ASTM D2013-01 (for coal) or ASTM D5198-92 (2003)(for biomass) or equivalent.
	d. Determine heat content of the fuel type.	ASTM D5865-03a (for coal) or ASTM E 711-87 (for biomass) or equivalent.
	e. Determine moisture content of the fuel type.	ASTM D3173-02 or ASTM E871 or equivalent.
	f. Measure total selected metals concentration in fuel sample.	SW-846-6010Bor ASTM D3683-94 (2000) (for coal) or ASTM E885-88 (1996) (for biomass).
	g. Convert concentrations into units of pounds of pollutant per MMBtu of heat content.	
3.Hydrogen chloride	a. Collect fuel samples.	Procedure in §63.7521(c) or ASTM D2234M-03 (for coal) or ASTM D6323-98 (2003) (for biomass)

		or equivalent.
	b. Composite fuel samples.	Procedure in §63.7521(d) or equivalent.
	c. Prepare composited fuel samples	SW-846-3050B (for solid samples) or SW-846-3020A (for liquid samples) or ASTM D2013-01 (for coal) or ASTM D5198-92 (2003) (for biomass) or equivalent.
	d. Determine heat content of the fuel type.	ASTM D5865-03a (for coal) or ASTME 711-87 (1996) (for biomass) or equivalent.
	e. Determine moisture content of the fuel type.	ASTM D3173-02 or ASTM E871-82 (1998) or equivalent.
	f. Measure chlorine concentration in fuel sample.	SW-846-9250 or ASTM E776-87 (1996) (for biomass) or equivalent.
	g. Convert concentrations into units of pounds of pollutant per MMBtu of heat content.	

Table 7 to Subpart DDDDD of Part 63 — Establishing Operating Limits

As stated in §63.7520, you must comply with the following requirements for establishing operating limits:

If you have an	And your operating	You must...	Using...	According to the following

applicable emission limit for...	limits are based on...			requirements
1. Particulate matter, mercury, or total selected metals.	a. Wet scrubber operating parameters	i. Establish a site-specific minimum pressure drop and minimum flow rate operating limit according to §63.7530(c)	(1) Data from the pressure drop and liquid flow rate monitors and the particulate matter, mercury, or total selected metals performance test.	(a) You must collect pressure drop and liquid flow-rate data every 15 minutes during the entire period of the performance tests; (b) Determine the average pressure drop and liquid flow-rate for each individual test run in the three-run performance test by computing the average of all the 15-minute readings taken during each test run.
	b. Electrostatic precipitator operating parameters (option only for units with additional wet scrubber	i. Establish a site-specific minimum voltage and secondary current	(1) Data from the pressure drop and liquid flow rate monitors and the particulate matter, mercury, or total selected metals performance test.	(a) You must collect voltage and secondary current or total power input data every 15 minutes during the entire period of the performance tests; (b) Determine the average voltage and secondary current or total power input for each individual test

	control)	or total power input according to §63.7530(c)		run in the three-run performance test by computing the average of all the 15-minute readings taken during each test run.
	c. A site-specific opacity limit (only for units that meet the criteria for having a site-specific opacity limit according to §63.7530(c)(6)(i)	i. Establish a site-specific maximum opacity operating limit according to §63.7530(c)	(1) Data from the continuous opacity monitoring system and the particulate matter, mercury, or total selected metals performance test.	(a) Collecting the opacity monitoring system data according to §63.7525(b) and §63.7535; and (b) Reducing the opacity monitoring data to 6-minute averages; and (c) Determine the average opacity for each individual test run in the three-run performance test by computing the average of all the 6-minute readings taken during each test run.

2. Hydrogen Chloride	a. Wet scrubber operating parameters	i. Establish a site-specific minimum pressure drop and minimum flow rate operating limit according to §63.7530(c)	(1) Data from the pH, pressure drop, and liquid flow rate monitors and the hydrogen chloride performance test.	(a) You must collect pH, pressure drop, and liquid flow-rate data every 15 minutes during the entire period of the performance tests; (b) Determine the average pH, pressure drop, and liquid flow-rate for each individual test run in the three-run performance test by computing the average of all the 15-minute readings taken during each test run.
	b. Dry scrubber operating parameters	i. Establish a site-specific minimum sorbent injection rate operating	(1) Data from the sorbent injection rate monitors and the hydrogen chloride performance test.	(a) You must collect sorbent injection rate data every 15 minutes during the entire period of the performance tests; (b) Determine the average sorbent injection rate for each individual test run in the three-run performance test by computing

		limit according to §63.7530(c)		the average of all the 15-minute readings taken during each test run.

Table 8 to Subpart DDDDD of Part 63 — Demonstrating Continuous Compliance

As stated in §63.7540, you must show continuous compliance with the emission limitations for affected sources according to the following:

If you must meet the following operating limits or work practice standards...	**You must demonstrate continuous compliance by...**
1. Opacity.	a. Collecting the opacity monitoring system data according to §§63.7525(b) and 63.7535; and b. Reducing the opacity monitoring data to 6-minute averages; and c. Maintaining opacity to less than or equal to 20 percent (6-minute average) except for one 6-minute period per hour of not more than 27 percent for existing sources; OR maintaining opacity to less than or equal to 10 percent (1-hour block average) for new sources.
2. Fabric Filter Bag Leak Detection Operation.	Installing and operating a bag leak detection system according to §63.7525 and operating the fabric filter such that the requirements in §63.7540(a)(9) are met.

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3. Wet Scrubber Pressure Drop and Liquid Flow-rate.	a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§63.7525 and 63.7535; and b. Reducing the data to 3-hour block averages; and c. Maintaining the 3-hour average pressure drop and liquid flow-rate at or above the operating limits established during the performance test according to §63.7530 (c).
4. Wet Scrubber pH.	a. Collecting the pH monitoring system data according to §§63.7525 and 63.7535; and b. Reducing the data to 3-hour block averages; and c. Maintaining the 3-hour average pH at or above the operating limit established during the performance test according to §63.7530(c).
5. Dry Scrubber Sorbent or Carbon Injection Rate.	a. Collecting the sorbent or carbon injection rate monitoring system data for the dry scrubber according to §§63.7525 and 63.7535; and b. Reducing the data to 3-hour block averages; and c. Maintaining the 3-hour average sorbent or carbon injection rate at or above the operating limit established during the performance test according to §63.7530(c).

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6. Electrostatic Precipitator Secondary Current and Voltage or Total Power Input.	a. Collecting the secondary current and voltage or total power input monitoring system data for the electrostatic precipitator according to §§63.7525 and 63.7535; and b. educing the data to 3-hour block averages; and c. Maintaining the 3-hour average secondary current and voltage or total power input at or above the operating limits established during the performance test according to §63.7530(c).
7. Fuel Pollutant Content.	a. Only burning the fuel types and fuel mixtures used to demonstrate compliance with the applicable emission limit according to §63.7530(c) or (d) as applicable; and b. Keeping monthly records of fuel use according to §63.7540(a).

Table 9 to Subpart DDDDD of Part 63 — Reporting Requirements

As stated in §63.7550, you must comply with the following requirements for reports:

You must submit a(n)	**The report must contain...**	**You must submit the report...**
1. compliance report	a. information required in §63.7550(c)(1)through(11) AND b. if there are no deviations from any emission limitation (emission limit and	semiannually according to the requirements in §63.7550(b).

	operating limit) that applies to you and there are no deviations from the requirements for work practice standards in Table 8 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), a statement that there were no periods during the which the CMSs were out-of-control during the reporting period AND c. if you have a deviation from any emission limitation (emission limit and operating limit) or work practice standard during the reporting period, the report must contain the information in §63.7550(d). If there were periods during which the CMSs, including continuous emissions monitoring	

	system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control, as specified in §63.8(c)(7), the report must contain the information in §63.7550(e) AND d. if you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in §63.10(d)(5)(i)	

2. an immediate startup, shutdown, and malfunction report if you had a startup, shutdown, or malfunction during the reporting period that is not consistent with your startup, shutdown, and malfunction plan	a. actions taken for the event AND b. The information in §63.10(d)(5)(ii)	i. by fax or telephone within 2 working days after starting actions inconsistent with the plan; and ii. by letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authority.

Table 10 to Subpart DDDDD of Part 63 — Applicability of General Provisions to Subpart DDDDD

As stated in §63.7565, you must comply with the applicable General Provisions according to the following:

Citation	Subject	Brief Description	Applicalbe
§63.1	Applicability	Initial Applicability Determination; Applicability After Standard Established; Permit Requirements; Extensions, Notifications	Yes.

§63.2	Definitions	Definitions for part 63 standards	Yes.
§63.3	Units and Abbreviations	Units and abbreviations for part 63 standards	Yes.
§63.4	Prohibited Activities	Prohibited Activities; Compliance date; Circumvention, Severability	Yes.
§63.5	Construction /Reconstruction	Applicability; applications; approvals	Yes.
§63.6(a)	Applicability	GP apply unless compliance extension AND GP apply to area sources that become major	Yes.
§63.6(b)(1)-(4)	Compliance Dates for New and Reconstructed sources	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for 112(f)	Yes.
§63.6(b)(5)	Notification	Must notify if commenced construction or reconstruction after proposal	Yes.
§63.6(b)(6)	[Reserved]		

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§63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source	Yes.
§63.6(c)(1)-(2)	Compliance Dates for Existing Sources	Comply according to date in subpart, which must be no later than 3 years after effective date AND For 112(f) standards, comply within 90 days of effective date unless compliance extension	Yes.
§63.6(c)(3)-(4)	[Reserved]		
§63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Area sources that become major must comply with major source standards by date indicated in subpart or by equivalent time period (e.g.,example, 3 years)	Yes.
§63.6(d)	[Reserved]		
§63.6(e)(1)-(2)	Operation & Maintenance	Operate to minimize emissions at all times AND Correct malfunctions as soon as practicable	Yes.

		AND Operation and maintenance requirements independently enforceable information Administrator will use to determine if operation and maintenance requirements were met	
§63.6(e)(3)	Startup, Shutdown, and Malfunction Plan (SSMP)	Requirement for SSM and startup, shutdown, malfunction plan Content of SSMP	Yes.
§63.6(f)(1)	Compliance Except During SSM	Comply with emission standards at all times except during SSM	Yes.
§63.6(f)(2)-(3)	Methods for Determining Compliance	Compliance based on performance test, operation and maintenance plans, records, inspection	Yes.
§63.6(g)(1)-(3)	Alternative Standard	Procedures for getting an alternative standard	Yes.
§63.6(h)(1)	Compliance with Opacity/VE Standards	Comply with opacity/VE emission limitations at all times except during SSM	Yes.
§63.6(h)(2)(i)	Determining Compliance with Opacity/Visible Emission (VE) Standards	If standard does not state test method, use Method 9 for opacity and Method 22 for VE	No.

§63.6(h)(2)(ii)	[Reserved]		
§63.6(h)(2)(iii)	Using Previous Tests to Demonstrate Compliance with Opacity/VE Standards	Criteria for when previous opacity/VE testing can be used to show compliance with this subpart	Yes.
§63.6(h)(3)	[Reserved]		
§63.6(h)(4)	Notification of Opacity/VE Observation Date	Notify Administrator of anticipated date of observation	No.
§63.6(h)(5)(i), (iii)-(v)	Conducting Opacity/VE Observations	Dates and Schedule for conducting opacity/VE observations	No.
§63.6(h)(5)(ii)	Opacity Test Duration and Averaging Times	Must have at least 3 hours of observation with thirty, 6-minute averages	No.
§63.6(h)(6)	Records of Conditions During Opacity/VE observations	Keep records available and allow Administrator to inspect	No.
§63.6(h)(7)(i)	Report continuous opacity monitoring system Monitoring Data from Performance Test	Submit continuous opacity monitoring system data with other performance test data	Yes.

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§63.6(h)(7)(ii)	Using continuous opacity monitoring system instead of Method 9	Can submit continuous opacity monitoring system data instead of Method 9 results even if subpart requires Method 9, but must notify Administrator before performance test	No.
§63.6(h)(7)(iii)	Averaging time for continuous opacity monitoring system during performance test	To determine compliance, must reduce continuous opacity monitoring system data to 6-minute averages	Yes.
§63.6(h)(7)(iv)	Continuous opacity monitoring system requirements	Demonstrate that continuous opacity monitoring system performance evaluations are conducted according to §§63.8(e), continuous opacity monitoring system are properly maintained and operated according to 63.8(c) and data quality as §63.8(d)	Yes.

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§63.6(h)(7)(v)	Determining Compliance with Opacity/VE Standards	Continuous opacity monitoring system is probative but not conclusive evidence of compliance with opacity standard, even if Method 9 observation shows otherwise. Requirements for continuous opacity monitoring system to be probative evidence–proper maintenance, meeting PS 1, and data have not been altered	Yes.
§63.6(h)(8)	Determining Compliance with Opacity/VE Standards	Administrator will use all continuous opacity monitoring system, Method 9, and Method 22 results, as well as information about operation and maintenance to determine compliance	Yes.
§63.6(h)(9)	Adjusted Opacity Standard	Procedures for Administrator to adjust an opacity standard	Yes.
§63.6(i)(1)-(14)	Compliance Extension	Procedures and criteria for Administrator to grant compliance extension	Yes.
§63.6(j)	Presidential Compliance Exemption	President may exempt source category from requirement to comply with rule	Yes.
§63.7(a)(1)	Performance Test Dates	Dates for Conducting Initial Performance Testing and Other Compliance Demonstrations	Yes.

§63.7(a)(2)	Performance Test Dates	New source with initial startup date before effective date has 180 days after effective date to demonstrate compliance	Yes.
§63.7(a)(2)(ii-viii)	[Reserved]		
§63.7(a)(2)(ix)	Performance Test Dates	New source that commenced construction between proposal and promulgation dates, when promulgated standard is more stringent than proposed standard, has 180 days after effective date or 180 days after startup of source, whichever is later, to demonstrate compliance AND If source initially demonstrates compliance with less stringent proposed standard, it has 3 years and 180 days after the effective date of the standard or 180 days after startup of source, whichever is later, to demonstrate compliance with promulgated standard	Yes. No.

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§63.7(a)(3)	Section 114 Authority	Administrator may require a performance test under CAA Section 114 at any time	Yes.
§63.7(b)(1)	Notification of Performance Test	Must notify Administrator 60 days before the test	Yes.
§63.7(b)(2)	Notification of Rescheduling	If rescheduling a performance test is necessary, must notify Administrator 5 days before scheduled date of rescheduled date	Yes.
§63.7(c)	Quality Assurance/Test Plan	Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with: Test plan approval procedures AND Performance audit requirements AND Internal and External QA procedures for testing	Yes.
§63.7(d)	Testing Facilities	Requirements for testing facilities	Yes.
§63.7(e)(1)	Conditions for Conducting Performance Tests	Performance tests must be conducted under representative conditions	No.
		AND	

		Cannot conduct performance tests during SSM.	Yes.
		AND	
		Not a deviation to exceed standard during SSM	Yes.
		AND	
		Upon request of Administrator, make available records necessary to determine conditions of performance tests	Yes.
§63.7(e)(2)	Conditions for Conducting Performance Tests	Must conduct according to rule and EPA test methods unless Administrator approves alternative	Yes.
§63.7(e)(3)	Test Run Duration	Must have three separate test runs AND Compliance is based on arithmetic mean of three runs AND Conditions when data from an additional test run can be used	Yes.
§63.7(e)(4)	Interaction with other sections of the Act.	Nothing in §63.7(e)(1) through (4) can abrogate the Administrator's authority to require testing under Section 114 of the Act.	Yes.

§63.7(f)	Alternative Test Method	Procedures by which Administrator can grant approval to use an alternative test method	Yes.
§63.7(g)	Performance Test Data Analysis	Must include raw data in performance test report AND Must submit performance test data 60 days after end of test with the Notification of Compliance Status AND Keep data for 5 years	Yes.
§63.7(h)	Waiver of Tests	Procedures for Administrator to waive performance test	Yes.
§63.8(a)(1)	Applicability of Monitoring Requirements	Subject to all monitoring requirements in standard	Yes.
§63.8(a)(2)	Performance Specifications	Performance Specifications in appendix B of part 60 apply	Yes.
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring with Flares	Unless your rule says otherwise, the requirements for flares in §63.11 apply	No.

§63.8(b)(1)(i)-(ii)	Monitoring	Must conduct monitoring according to standard unless Administrator approves alternative	Yes.
§63.8(b)(1)(iii)	Monitoring	Flares not subject to this section unless otherwise specified in relevant standard	No.
§63.8(b)(2)-(3)	Multiple Effluents and Multiple Monitoring Systems	Specific requirements for installing monitoring systems AND Must install on each effluent before it is combined and before it is released to the atmosphere unless Administrator approves otherwise AND If more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup	Yes.
§63.8(c)(1)	Monitoring System Operation and Maintenance	Maintain monitoring system in a manner consistent with good air pollution control practices	Yes.
§63.8(c)(1)(i)	Routine and Predictable SSM	Maintain and operate CMS according to §63.6(e)(1)	Yes.

§63.8(c)(1)(ii)	SSM not in SSMP	Must keep necessary parts available for routine repairs of CMSs	Yes.
§63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements	Must develop and implement an SSMP for CMSs	Yes.
§63.8(c)(2)-(3)	Monitoring System Installation	Must install to get representative emission and parameter measurements AND Must verify operational status before or at performance test	Yes.
§63.8(c)(4)	Continuous Monitoring System (CMS) Requirements	CMSs must be operating except during breakdown, out-of-control, repair, maintenance, and high-level calibration drifts	No.
§63.8(c)(4)(i)	Continuous Monitoring System (CMS) Requirements	Continuous opacity monitoring system must have a minimum of one cycle of sampling and analysis for each successive 10-second period and one cycle of data recording for each successive 6-minute period	Yes.

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§63.8(c)(4)(ii)	Continuous Monitoring System (CMS) Requirements	Continuous emissions monitoring system must have a minimum of one cycle of operation for each successive 15-minute period	No.
§63.8(c)(5)	Continuous Opacity Monitoring system (COMS) Requirements	Must do daily zero and high level calibrations	Yes.
§63.8(c)(6)	Continuous Monitoring System (CMS) Requirements	Must do daily zero and high level calibrations	No.
§63.8(c)(7)-(8)	Continuous monitoring systems Requirements	Out-of-control periods, including reporting	Yes.
§63.8(d)	Continuous monitoring systems Quality Control	Requirements for continuous monitoring systems quality control, including calibration, etc. AND Must keep quality control plan on record for the life of the affected source. Keep old versions for 5 years after revisions	Yes.
§63.8(e)	Continuous monitoring systems Performance Evaluation	Notification, performance evaluation test plan, reports	Yes.

§63.8(f)(1)-(5)	Alternative Monitoring Method	Procedures for Administrator to approve alternative monitoring	Yes.
§63.8(f)(6)	Alternative to Relative Accuracy Test	Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system	No.
§63.8(g)(1)-(4)	Data Reduction	Continuous opacity monitoring system 6-minute averages calculated over at least 36 evenly spaced data points AND Continuous emissions monitoring system 1-hour averages computed over at least 4 equally spaced data points	Yes.
§63.8(g)(5)	Data Reduction	Data that cannot be used in computing averages for continuous emissions monitoring system and continuous opacity monitoring system	No.
§63.9(a)	Notification Requirements	Applicability and State Delegation	Yes.

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§63.9(b)(1)-(5)	Initial Notifications	Submit notification 120 days after effective date AND Notification of intent to construct/ reconstruct AND Notification of commencement of construct/reconstruct ; Notification of startup AND Contents of each	Yes.
§63.9(c)	Request for Compliance Extension	Can request if cannot comply by date or if installed BACT/LAER	Yes.
§63.9(d)	Notification of Special Compliance Requirements for New Source	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date	Yes.
§63.9(e)	Notification of Performance Test	Notify Administrator 60 days prior	Yes.
§63.9(f)	Notification of VE/Opacity Test	Notify Administrator 30 days prior	No.

§63.9(g)	Additional Notifications When Using Continuous Monitoring Systems	Notification of performance evaluation AND Notification using continuous opacity monitoring system data AND Notification that exceeded criterion for relative accuracy	Yes.
§63.9(h)(1)-(6)	Notification of Compliance Status	Contents AND Due 60 days after end of performance test or other compliance demonstration, When to submit to Federal vs. State authority	Yes.
§63.9(i)	Adjustment of Submittal Deadlines	Procedures for Administrator to approve change in when notifications must be submitted	Yes.
§63.9(j)	Change in Previous Information	Must submit within 15 days after the change	Yes.

§63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension AND When to submit to Federal vs. State authority AND Procedures for owners of more than 1 source	Yes.
§63.10(b)(1)	Recordkeeping/Reporting	General Requirements AND Keep all records readily available AND Keep for 5 years	Yes.
§63.10(b)(2)(i)-(v)	Records related to Startup, Shutdown, and Malfunction	Occurrence of each of operation (process equipment) AND Occurrence of each malfunction of air pollution equipment AND Maintenance on air pollution control equipment AND Actions during startup, shutdown, and malfunction	Yes.

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§63.10(b)(2)(vi) and (x-xi)	Continuous monitoring systems Records	Malfunctions, inoperative, out-of-control AND Calibration checks AND Adjustments, maintenance	Yes.
§63.10(b)(2)(vii)-(ix)	Records	Measurements to demonstrate compliance with emission limitations AND Performance test, performance evaluation, and visible emission observation results AND Measurements to determine conditions of performance tests and performance evaluations.	Yes.
§63.10(b)(2)(xii)	Records	Records when under waiver	Yes.
§63.10(b)(2)(xiii)	Records	Records when using alternative to relative accuracy test	No.
§63.10(b)(2)(xiv)	Records	All documentation supporting Initial Notification and Notification of Compliance Status	Yes.

§63.10(b)(3)	Records	Applicability Determinations	Yes.
§63.10(c)(1),(5)-(8),(10)-(15)	Records	Additional Records for continuous monitoring systems	Yes.
§63.10(c)(7)-(8)	Records	Records of excess emissions and parameter monitoring exceedances for continuous monitoring systems	No.
§63.10(d)(1)	General Reporting Requirements	Requirement to report	Yes.
§63.10(d)(2)	Report of Performance Test Results	When to submit to Federal or State authority	Yes.
§63.10(d)(3)	Reporting Opacity or VE Observations	What to report and when	Yes.
§63.10(d)(4)	Progress Reports	Must submit progress reports on schedule if under compliance extension	Yes.
§63.10(d)(5)	Startup, Shutdown, and Malfunction Reports	Contents and submission	Yes.

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§63.10(e)(1)-(2)	Additional continuous monitoring systems Reports	Must report results for each CEM on a unit AND Written copy of performance evaluation AND 3 copies of continuous opacity monitoring system performance evaluation	Yes.
§63.10(e)(3)	Reports	Excess Emission Reports	No.
§63.10(e)(3)(i-iii)	Reports	Schedule for reporting excess emissions and parameter monitor exceedance (now defined as deviations)	No.
§63.10(e)(3)(iv-v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedance (now defined as deviations) AND Provision to request semiannual reporting after compliance for one year AND	No.

		Submit report by 30th day following end of quarter or calendar half AND If there has not been an exceedance or excess emission (now defined as deviations), report contents is a statement that there have been no deviations	
§63.10(e)(3)(iv-v)	Excess Emissions Reports	Must submit report containing all of the information in §63.10(c)(5-13), §63.8(c)(7-8)	No.
§63.10(e)(3)(vi-viii)	Excess Emissions Report and Summary Report	Requirements for reporting excess emissions for continuous monitoring systems (now called deviations) Requires all of the information in §63.10(c)(5-13), §63.8(c)(7-8)	No.
§63.10(e)(4)	Reporting continuous opacity monitoring system data	Must submit continuous opacity monitoring system data with performance test data	Yes.
§63.10(f)	Waiver for Recordkeeping/Reporting	Procedures for Administrator to waive	Yes.
§63.11	Flares	Requirements for flares	No.

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§63.12	Delegation	State authority to enforce standards	Yes.
§63.13	Addresses	Addresses where reports, notifications, and requests are sent	Yes.
§63.14	Incorporation by Reference	Test methods incorporated by reference	Yes.
§63.15	Availability of Information	Public and confidential information	Yes.

Appendix A to Subpart DDDDD – Methodology and Criteria for Demonstrating Eligibility for the Health-Based Compliance Alternatives Specified for the Large Solid Fuel Subcategory

1. Purpose/Introduction

This appendix provides the methodology and criteria for demonstrating that your affected source is eligible for the compliance alternative for the HCl emission limit and/or the total selected metals (TSM) emission limit. This appendix specifies emissions testing methods that you must use to determine HCl, chlorine, and manganese emissions from the affected units and what parts of the affected source facility must be included in the eligibility demonstration. You must demonstrate that your affected source is eligible for the health-based compliance alternatives using either a look-up table analysis (based on the look-up tables included in this appendix) or a site-specific compliance demonstration performed according to the criteria specified in this appendix. This appendix also specifies how and when you file any eligibility demonstrations for your affected source and how to show that your affected source remains eligible for the health-based compliance alternatives in the future.

2. Who is eligible to demonstrate that they qualify for the health-based compliance alternatives?

Each new, reconstructed, or existing affected source may demonstrate that they are eligible for the health-based

compliance alternatives. Section 63.7490 of subpart DDDDD defines the affected source and explains which affected sources are new, existing, or reconstructed.

3. What parts of my facility have to be included in the health-based eligibility demonstration?

If you are attempting to determine your eligibility for the compliance alternative for HCl, you must include every emission point subject to subpart DDDDD in the eligibility demonstration.

If you are attempting to determine your eligibility for the compliance alternative for TSM, you must include every emission point subject to subpart DDDDD in the eligibility demonstration.

4. How do I determine HAP emissions from my affected source?

(a) You must conduct HAP emissions tests for every emission point covered under subpart DDDDD within the affected source facility according to the requirements in paragraphs (b) through (f) of this section and the methods specified in Table 1 of this appendix.

If you are attempting to determine your eligibility for the compliance alternative for HCl, you must test the subpart DDDDD units at your facility for both HCl and Cl_2.

If you are attempting to determine your eligibility for the compliance alternative for TSM, you must test the subpart DDDDD units at your facility for manganese.

(b) Periods when emissions tests must be conducted.

(1) You must not conduct emissions tests during periods of startup, shutdown, or malfunction, as specified in §63.7(e)(1).

(2) You must test under worst-case operating conditions as defined in this appendix. You must describe your worst-case operating conditions in your performance test report for the process and control systems (if applicable) and explain why the conditions are worst-case.

(c) Number of test runs. You must conduct three separate test runs for each test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(d) Sampling locations. Sampling sites must be located at the outlet of the control device and prior to any releases to the atmosphere.

(e) Collection of monitoring data for HAP control devices. During the emissions test, you must collect operating parameter monitoring system data at least every 15 minutes during the entire emissions test and establish the site-specific operating requirements in Tables 3 or 4, as appropriate, of subpart DDDDD using data from the monitoring system and the procedures specified in §63.7530 of subpart DDDDD.

(f) Nondetect data. You may treat emissions of an individual HAP as zero if all of the test runs result in a nondetect measurement and the condition in paragraph (1) is met for the manganese test method. Otherwise nondetect data for individual HAP must be treated as one-half of the method detection limit.

(1) For manganese measured using Method 29 in appendix A to 40 CFR part 60, you analyze samples using atomic absorption spectroscopy (AAS).

(g) You must determine the maximum hourly emission rate for each appropriate emission point according to equation 1.

$$AveWeightedEmissions = \sum_{i=1}^{n} (Er \times Hm) \div \sum_{i=1}^{n} Hm$$

(Eq. 1)

Where:

MaxHourly Emissions	=	Maximum hourly emissions for hydrogen chloride, chlorine, or manganese, in units of pounds per hour.
Er	=	Emission rate (the 3-run average as determined according to Table 1 of this appendix) for hydrogen chloride, chlorine, or manganese, in units of pounds per million Btu of heat input.
Hm	=	Maximum rated heat input capacity of appropriate emission point, in

units of million Btu per hour.

5. What are the criteria for determining if my facility is eligible for the health-based compliance alternatives?

(a) Determine the HAP emissions from each appropriate emission point within the affected source facility using the procedures specified in section 4 of this appendix.

(b) Demonstrate that your facility is eligible for either of the health-based compliance alternatives using either the methods described in section 6 of this appendix (look-up table analysis) or section 7 of this appendix (site-specific compliance demonstration).

(c) Your facility is eligible for the health-based compliance alternative for HCl if 1 of the following 2 statements is true:

(1) The calculated HCl-equivalent emission rate is below the appropriate value in the look-up table;

(2) Your site-specific compliance demonstration indicates that your maximum HI for HC1 and $C1_2$ at a location where people live is less than or equal to 1.0;

(d) Your facility is eligible for the health-based compliance alternative for TSM if 1 of the following 2 statements is true:

(1) The manganese emission rate for all your subpart DDDDD sources is below the appropriate value in the look-up table;

(2) Your site-specific compliance demonstration indicates that your maximum HQ for manganese at a location where people live is less than or equal to 1.0;

6. How do I conduct a look-up table analysis?

You may use look-up tables to demonstrate that your facility is eligible for either the compliance alternative for the HCl emission limit or the compliance alternative for TSM emission limit.

(a) <u>HCl health-based compliance alternative.</u> To calculate the total toxicity-weighted HCl-equivalent emission rate for your facility, first calculate the total

affected source emission rate of HCl by summing the maximum hourly HCl emission rates from all your subpart DDDDD sources. Then, similarly, calculate the total affected source emission rate for Cl_2. Finally, calculate the toxicity-weighted emission rate (expressed in HCl equivalents) according to equation 2 of this appendix.

$$ER_{tw} = 3(ER_i \times (RfC_{HCl}/RfC_i)) \qquad \text{Eq. 2}$$

where:

ER_{tw} is the HC1-equivalent emission rate, lb/hr
ER_i is the emission rate of HAP i in lbs/hr
RfC_i is the reference concentration of HAP i
RfC_{HCl} is the reference concentration of HCl (RfCs for HC1 and $C1_2$ can be found at http://www.epa.gov/ttn/atw/toxsource/summary.html)

The calculated HCl-equivalent emission rate will then be compared to the appropriate allowable emission rate in Table 2 of this appendix. To determine the correct value from the table, a subpart DDDDD average value should be used for stack height and the minimum distance between any subpart DDDDD stack at the facility and the property boundary should be used for property boundary distance. If one or both of these values do not match the exact values in the lookup tables then use the next lowest table value. (Note: If your average stack height is less than 5 meters, you must use the 5 meter row.) Your facility is eligible to comply with the health-based alternative HCl emission limit if your toxicity-weighted HCl equivalent emission rate, determined using the methods specified in this appendix, does not exceed the appropriate value in Table 2 of this appendix.

(b) TSM Compliance Alternative. To calculate the total manganese emission rate for your affected source, sum the maximum hourly manganese emission rates for all your subpart DDDDD sources. The calculated manganese emission rate will then be compared to the allowable emission rate in the Table 3 of this appendix. To determine the correct value from the table, a subpart DDDDD average value should be used for stack height and the minimum distance between any subpart DDDDD stack at the facility and the property boundary should be used for property boundary distance. If one or both of

these values do not match the exact values in the lookup tables then use the next lowest table value. (Note: If your average stack height is less than 5 meters, you must use the 5 meter row.) Your facility may exclude manganese when demonstrating compliance with the TSM emission limit if your manganese emission rate, determined using the methods specified in this appendix, does not exceed the appropriate value specified in Table 3 of this appendix.

7. How do I conduct a site-specific compliance demonstration?

If you fail to demonstrate that your facility is able to comply with one or both of the alternative health-based emission standards using the lookup table approach, you may choose to perform a site-specific compliance demonstration for your facility. You may use any scientifically-accepted peer-reviewed risk assessment methodology for your site-specific compliance demonstration. An example of one approach for performing a site-specific compliance demonstration for air toxics can be found in the EPA's "Air Toxics Risk Assessment Reference Library, Volume 2, Site-Specific Risk Assessment Technical Resource Document", which may be obtained through the EPA's Air Toxics Website at www.epa.gov/ttn/atw.

(a) Your facility is eligible for the HCl alternative compliance option if your site-specific compliance demonstration shows that the maximum HI for HC1 and Cl_2 from your subpart DDDDD sources is less than 1.0.

(b) Your facility is eligible for the TSM alternative compliance option if your site-specific compliance demonstration shows that the maximum HQ for manganese from your subpart DDDDD sources is less than 1.0.

(c) at a minimum, your site-specific compliance demonstration must:

(1) estimate long-term inhalation exposures through the estimation of annual or multi-year average ambient concentrations;

(2) estimate the inhalation exposure for the individual most exposed to the facility's emissions;

(3) use site-specific, quality-assured data wherever possible;

(4) use health-protective default assumptions wherever site-specific data are not available, and;

(5) contain adequate documentation of the data and methods used for the assessment so that it is transparent and can be reproduced by an experienced risk assessor and emissions measurement expert.

(d) Your site-specific compliance demonstration need not:

(1) assume any attenuation of exposure concentrations due to the penetration of outdoor pollutants into indoor exposure areas;

(2) assume any reaction or deposition of the emitted pollutants during transport from the emission point to the point of exposure;

8. What must my health-based eligibility demonstration contain?

(a) Your health-based eligibility demonstration must contain, at a minimum, the information specified in paragraphs (a)(1) through (6) of this section.

(1) Identification of each appropriate emission point at the affected source facility, including the maximum rated capacity of each appropriate emission point.

(2) Stack parameters for each appropriate emission point including, but not limited to, the parameters listed in (a)(2)(i) through (iv) below:

(i) Emission release type

(ii) Stack height, stack area, stack gas temperature, and stack gas exit velocity

(iii) Plot plan showing all emission points, nearby residences, and fenceline.

(iv) Identification of any control devices used to reduce emissions from each appropriate emission point.

(3) Emission test reports for each pollutant and appropriate emission point which has been tested using the test methods specified in Table 1 of this appendix, including a description of the process parameters identified

as being worst case. For those emissions which are not measured but are included in the assessment, the calculation method used, the inputs and outputs of any estimation developed, and any supporting references should be included in the documentation.

(4) Identification of the RfC values used in your look-up table analysis or site-specific compliance demonstration.

(5) Calculations used to determine the HCl-equivalent or manganese emission rates according to sections 6(a) or (b) of this appendix.

(6) Identification of the controlling process factors (including, but not limited to, fuel type, heat input rate, type of control devices, process parameters reflecting the emissions rates used for your eligibility demonstration) that will become Federally enforceable permit conditions used to show that your facility remains eligible for the health-based compliance alternatives.

(b) If you use the look-up table analysis in section 6 of this appendix to demonstrate that your facility is eligible for either health-based compliance alternative, your eligibility demonstration must contain, at a minimum, the information in paragraphs (a) and (b)(1) through (3) of this section.

(1) Calculations used to determine the average stack height of the subpart DDDDD emission points.

(2) Identification of the subpart DDDDD emission point with the minimum distance to the property boundary of the facility.

(3) Comparison of the values in the look-up tables (Tables 2 and 3 of this appendix) to your maximum HCl-equivalent or manganese emission rates.

(c) If you use a site-specific compliance demonstration as described in section 7 of this appendix to demonstrate that your facility is eligible, your eligibility demonstration must contain, at a minimum, the information in paragraphs (a) and (c)(1) through (7) of this section:

(1) Identification of the risk assessment methodology used.

(2) Documentation of the fate and transport model used.

(3) Documentation of the fate and transport model inputs, including the information described in paragraphs (a)(1) through (5) of this section converted to the dimensions required for the model and all of the following that apply: meteorological data; building, land use, and terrain data; receptor locations and population data; and other facility-specific parameters input into the model.

(4) Documentation of the fate and transport model outputs.

(5) Documentation of any exposure assessment and risk characterization calculations.

(6) Comparison of the HQ HI to the limit of 1.0.

9. When do I have to complete and submit my health-based eligibility demonstration?

(a) If you have an existing affected source, you must complete and submit your eligibility demonstration to your permitting authority, along with a signed certification that the demonstration is an accurate depiction of your facility, no later than the date one year prior to the compliance date of subpart DDDDD. A separate copy of the eligibility demonstration must be submitted to: U.S. EPA, Risk and Exposure Assessment Group, Emission Standards Division (C404-01), Attn: Group Leader, Research Triangle Park, North Carolina 27711.

(b) If you have a new or reconstructed affected source that starts up before the effective date of subpart DDDDD, or an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP before the effective date of subpart DDDDD, then you must comply with the requirements of subpart DDDDD until your eligibility demonstration is completed and submitted to your permitting authority.

(c) If you have a new or reconstructed affected source that starts up after the effective date for subpart DDDDD, or an affected source that is an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP after the effective date for subpart DDDDD, then you must follow the schedule in paragraphs (1) and (2) of this section.

(1) You must complete and submit a preliminary eligibility demonstration based on the information (e.g., equipment types, estimated emission rates, etc.) used to obtain your title V permit. You must base your preliminary eligibility demonstration on the maximum emissions allowed under your title V permit. If the preliminary eligibility demonstration indicates that your affected source facility is eligible for either compliance alternative, then you may start up your new affected source and your new affected source will be considered in compliance with the alternative HCl standard and subject to the compliance requirements in this appendix or, in the case of manganese, your compliance demonstration with the TSM emission limit is based on 7 metals (excluding manganese).

(2) You must conduct the emission tests specified in section 4 of this appendix upon initial startup and use the results of these emissions tests to complete and submit your eligibility demonstration within 180 days following your initial startup date. To be eligible, you must meet the criteria in section 11 of this appendix within 18 months following initial startup of your affected source.

10. When do I become eligible for the health-based compliance alternatives?

To be eligible for either health-based compliance alternative, the parameters that defined your affected source as eligible for the health-based compliance alternatives (including, but not limited to, fuel type, type of control devices, process parameters reflecting the emissions rates used for your eligibility demonstration) must be incorporated as Federally enforceable limits into your title V permit. If you do not meet these criteria, then your affected source is subject to the applicable emission limits, operating limits, and work practice standards in Subpart DDDDD.

11. How do I ensure that my facility remains eligible for the health-based compliance alternatives?

(a) You must update your eligibility demonstration and resubmit it each time you have a process change, such that any of the parameters that defined your affected source changes in a way that could result in increased HAP emissions (including, but not limited to, fuel type, change in type of control device, changes in process parameters documented as worst-case conditions during the emissions

testing used for your approved eligibility demonstration).

(b) If you are updating your eligibility demonstration to account for an action in paragraph (a) of this section, then you must perform emission testing according to section 4 of this appendix for the subpart DDDDD emission points that may have increased HAP emissions beyond the levels reflected in your previously approved eligibility demonstration due to the process change. You must submit your revised eligibility demonstration to the permitting authority prior to revising your permit to incorporate the process change. If your updated eligibility demonstration indicates that your affected source is no longer eligible for the health-based compliance alternatives, then you must comply with the applicable emission limits, operating limits, and compliance requirements in Subpart DDDDD prior to making the process change and revising your permit.

13. What records must I keep?

You must keep records of the information used in developing the eligibility demonstration for your affected source, including all of the information specified in section 8 of this appendix.

14. Definitions.

The definitions in §63.7575 of subpart DDDDD apply to this appendix. Additional definitions applicable for this appendix are as follows:

Hazard Index (HI) means the sum of more than one hazard quotient for multiple substances and/or multiple exposure pathways.

Hazard Quotient (HQ) means the ratio of the predicted media concentration of a pollutant to the media concentration at which no adverse effects are expected. For inhalation exposures, the HQ is calculated as the air concentration divided by the RfC.

Look-up table analysis means a risk screening analysis based on comparing the HAP or HAP-equivalent emission rate from the affected source to the appropriate maximum allowable HAP or HAP-equivalent emission rates specified in Tables 2 and 3 of this appendix.

Reference Concentration (RfC) means an estimate (with

uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. It can be derived from various types of human or animal data, with uncertainty factors generally applied to reflect limitations of the data used.

Worst-case operating conditions means operation of an affected unit during emissions testing under the conditions that result in the highest HAP emissions or that result in the emissions stream composition (including HAP and non-HAP) that is most challenging for the control device if a control device is used. For example, worst case conditions could include operation of an affected unit firing solid fuel likely to produce the most HAP.

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Table 1 to Appendix B of Subpart DDDDD. Emission Test Methods.

For...	You must...	Using...
(1) each subpart DDDDD emission point for which you choose to use a compliance alternative	select sampling ports' location and the number of traverse points	Method 1 of 40 CFR part 60, appendix A.
(2) each emission DDDDD emission point for which you choose to use a compliance alternative	determine velocity and volumetric flow rate;	Method 2, 2F, or 2G in appendix A to 40 CFR part 60.
(3) each emission DDDDD emission point for which you choose to use a compliance alternative	conduct gas molecular weight analysis	Method 3A or 3B in appendix A to 40 CFR part 60.
(4) each emission DDDDD emission point for which you choose to use a compliance alternative	measure moisture content of the stack gas	Method 4 in appendix A to 40 CFR part 60.
(5) each emission DDDDD emission point for which you choose to use the HCl compliance alternative	measure the hydrogen chloride and chlorine emission concentrations	Method 26 or 26A in appendix A to 40 CFR part 60.
(6) each emission DDDDD emission point for which you choose to use the TSM compliance alternative	measure the manganese emission concentration	Method 29 in appendix A to 40 CFR part 60.

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(7) each emission DDDDD emission point for which you choose to use a compliance alternative	convert emissions concentration to lb per MMBtu emission rates.	Method 19 F-factor methodology in appendix A to part 60 of this chapter.

Table 2 to Appendix A of Subpart DDDDD. Allowable toxicity-weighted emission rate expressed in HCl equivalents (lbs/hr)

Stack ht.(m)	distance to property boundary (m) 0	50	100	150	200	250	500	1000	1500	2000	3000	5000
5	114.9	114.9	114.9	114.9	114.9	114.9	144.3	287.3	373.0	373.0	373.0	373.0
10	188.5	188.5	188.5	188.5	188.5	188.5	195.3	328.0	453.5	434.4	434.4	434.4
20	386.1	386.1	386.1	386.1	386.1	386.1	386.1	425.4	580.0	602.7	602.7	602.7
30	396.1	396.1	396.1	396.1	396.1	396.1	396.1	436.3	596.2	690.6	807.8	816.5
40	408.1	408.1	408.1	408.1	408.1	408.1	408.1	448.2	613.3	715.5	832.2	966.0
50	421.4	421.4	421.4	421.4	421.4	421.4	421.4	460.6	631.0	746.3	858.2	1002.8
60	435.5	435.5	435.5	435.5	435.5	435.5	435.5	473.4	649.0	778.6	885.0	1043.4
70	450.2	450.2	450.2	450.2	450.2	450.2	450.2	486.6	667.4	813.8	912.4	1087.4
80	465.5	465.5	465.5	465.5	465.5	465.5	465.5	500.0	685.9	849.8	940.9	1134.8
100	497.5	497.5	497.5	497.5	497.5	497.5	497.5	527.4	723.6	917.1	1001.2	1241.3
200	677.3	677.3	677.3	677.3	677.3	677.3	677.3	682.3	919.8	1167.1	1390.4	1924.6

Table 3 to Appendix A of Subpart DDDDD. Allowable Manganese Emission Rate (lbs/hr)

Stack ht.(m)	distance to property boundary (m) 0	50	100	150	200	250	500	1000	1500	2000	3000	5000
5	0.29	0.29	0.29	0.29	0.29	0.29	0.36	0.72	0.93	0.93	0.93	0.93
10	0.47	0.47	0.47	0.47	0.47	0.47	0.49	0.82	1.13	1.09	1.09	1.09
20	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.06	1.45	1.51	1.51	1.51
30	0.99	0.99	0.99	0.99	0.99	0.99	0.99	1.09	1.49	1.73	2.02	2.04
40	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.12	1.53	1.79	2.08	2.42
50	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.15	1.58	1.87	2.15	2.51
60	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.18	1.62	1.95	2.21	2.61
70	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.22	1.67	2.03	2.28	2.72

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80	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.25	1.71	2.12	2.35	2.84
100	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.32	1.81	2.29	2.50	3.10
200	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.71	2.30	2.92	3.48	4.81

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Federal Register

Tuesday,
May 20, 2003

Part II

Environmental Protection Agency

40 CFR Part 63

National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing; Final Rule

Attachment 1 Attachment 1

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[OAR 2002–0083; FRL–7460–2]

RIN 2060–AE48

National Emission Standards for Hazardous Air Pollutants: Integrated Iron and Steel Manufacturing

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action promulgates national emission standards for hazardous air pollutants (NESHAP) for integrated iron and steel manufacturing facilities. The final standards establish emission limitations for hazardous air pollutants (HAP) emitted from new and existing sinter plants, blast furnaces, and basic oxygen process furnace (BOPF) shops. The final standards will implement section 112(d) of the Clean Air Act (CAA) by requiring all major sources to meet HAP emission standards reflecting application of the maximum achievable control technology (MACT).

The HAP emitted by integrated iron and steel manufacturing facilities include metals (primarily manganese and lead with small quantities of other metals) and trace amounts of organic HAP (such as polycyclic organic matter, benzene, and carbon disulfide). Exposure to these substances has been demonstrated to cause adverse health effects, including chronic and acute disorders of the blood, heart, kidneys, reproductive system, and central nervous system.

EFFECTIVE DATE: May 20, 2003. The incorporation by reference of certain publications listed in the final rule is approved by the Director of the Federal Register as of May 20, 2003.

ADDRESSES: *Docket.* The official public docket is the collection of materials used in developing the final rule and is available for public viewing at the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC 20004.

FOR FURTHER INFORMATION CONTACT: Phil Mulrine, Metals Group (C439–02), Emission Standards Division, U.S. EPA, Research Triangle Park, NC 27711, telephone number (919) 541–5289, electronic mail (e-mail) address, *mulrine.phil@epa.gov.*

SUPPLEMENTARY INFORMATION:

Regulated Entities. Categories and entities potentially regulated by this action include:

Category	NAICS code *	Example of regulated entities
Industry	331111	Integrated iron and steel mills, steel companies, sinter plants, blast furnaces, BOPF shops.
Federal government		Not affected.
State/local/tribal government		Not affected.

* North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.7781 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section. *Docket.* The EPA has established an official public docket for this action under Docket ID No. OAR–2002–0083. The official public docket consists of the documents specifically referenced in this action, any public comments received, and other information related to this action. Although a part of the official docket, the public docket does not include Confidential Business Information or other information whose disclosure is restricted by statute. The official public docket is the collection of materials that is available for public viewing at the Air Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566–1744, and the telephone number for the Air Docket is (202) 566–1742. *Electronic Docket Access.* You may access the final rule electronically through the EPA Internet under the ''**Federal Register**'' listings at *http://www.epa.gov/fedrgstr/.*

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at *http://www.epa.gov/edocket/* to view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility in the above paragraph entitled ''Docket.'' Once in the system, select ''search,'' then key in the appropriate docket identification number. *Worldwide Web* (*WWW*). In addition to being available in the docket, an electronic copy of the final rule will also be available on the WWW through the Technology Transfer Network (TTN). Following signature, a copy of the final rule will be placed on the TTN's policy and guidance page for newly proposed or promulgated rules at *http://www.epa.gov/ttn/oarpg.* The TTN provides information and technology exchange in various areas of air pollution control. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541–5384.

Judicial Review. This action constitutes final administrative action on the proposed NESHAP for integrated iron and steel manufacturing facilities (66 FR 36836, July 13, 2001). Under CAA section 307(b)(1), judicial review of the final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by July 21, 2003. Under CAA section 307(b)(2), the requirements that are the subject of this document may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

Outline. The information presented in this preamble is organized as follows:

I. Background
II. Summary of Final Rule
A. Who must comply with the final rule?
B. What are the affected sources and emission points?
C. What are the emission limitations?
D. What are the operation and maintenance requirements?
E. What are the general compliance requirements?
F. What are the initial compliance requirements?
G. What are the continuous compliance requirements?

H. What are the notification, recordkeeping, and reporting requirements?
I. What are the compliance deadlines?
III. Summary of Responses to Major Comments
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C. Is a risk analysis warranted?
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IV. Summary of Environmental, Energy, and Economic Impacts
A. What are the air emission impacts?
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H. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use
I. National Technology Transfer Advancement Act
J. Congressional Review Act

I. Background

Section 112(d) of the CAA requires us (the EPA) to establish national emission standards for all categories and subcategories of major sources of HAP and for area sources listed for regulation under section 112(c). Major sources are those that emit or have the potential to emit at least 10 tons per year (tpy) of any single HAP or 25 tpy of any combination of HAP. Area sources are stationary sources of HAP that are not major sources. Additional information on the NESHAP development process can be found in the preamble to the proposed rule (66 FR 36836).

We received a total of 16 comment letters on the proposed NESHAP from industry and trade association representatives, State agencies, industry experts, environmental groups, universities, and private citizens. We offered to provide interested individuals the opportunity for oral presentations of data, views, or arguments concerning the proposed rule, but a public hearing was not requested.

Today's final rule reflects our full consideration of all the comments we received. Major public comments on the proposed rule along with our responses to these comments are summarized in section III of this document. A detailed response to all the comments is included in the Background Information Document (BID) for the Promulgated Standards (Docket ID No. OAR–2002–0083).

II. Summary of Final Rule

A. Who Must Comply With the Final Rule?

Each owner or operator of an affected source at an integrated iron and steel manufacturing facility that is (or is part of) a major source of HAP emissions must comply with the final rule.

B. What Are the Affected Sources and Emission Points?

The affected sources are each new or existing sinter plant, blast furnace, and BOPF shop at an integrated iron and steel manufacturing facility that is (or is part of) a major source of HAP emissions. Emission limitations apply to the sinter plant windbox exhaust, discharge end, and sinter cooler; the blast furnace casthouse; and the BOPF shop including each furnace and ancillary operations (hot metal transfer, hot metal desulfurization, slag skimming, and ladle metallurgy). These processes, as well as their emissions and controls, are described in the preamble to the proposed rule (66 FR 36838–36839).

C. What Are the Emission Limitations?

The final rule includes particulate matter (PM) emission limits and opacity limits as well as operating limits for capture systems and control devices. An operating limit also applies either to the oil content of the sinter plant feedstock or to the volatile organic compound (VOC) emissions from the sinter plant windbox exhaust stream. Particulate matter and opacity serve as surrogate measures of HAP emissions.

1. Sinter Plants

The PM emission limits for a windbox exhaust stream are 0.4 pounds per ton (lb/ton) of product sinter for an existing sinter plant and 0.3 lb/ton for a new sinter plant. The final rule limits PM emissions from a discharge end to 0.02 grains per dry standard cubic foot (gr/dscf) for an existing plant and 0.01 gr/dscf for a new plant. The discharge end PM limits are a flow-weighted average when multiple control devices are operated in parallel. A 20 percent opacity limit applies to fugitive emissions from a discharge end at an existing sinter plant; a 10 percent opacity limit applies to a new sinter plant (both are 6-minute averages). The PM emission limits for sinter cooler stacks are 0.03 gr/dscf for an existing plant and 0.01 gr/dscf for a new plant. If the sinter cooler is vented to the same control device as the discharge end, the PM limit is 0.02 gr/dscf for an existing plant and 0.01 gr/dscf for a new plant.

2. Blast Furnaces

The PM emission limits for a control device applied to emissions from a casthouse are 0.01 gr/dscf for an existing blast furnace and 0.003 gr/dscf for a new blast furnace. The opacity limits for fugitive emissions from a casthouse are 20 percent for an existing blast furnace and 15 percent for a new blast furnace (both are 6-minute averages).

3. BOPF Shops

For primary emissions from BOPF, different PM emission limits apply based on the type of hood system (closed or open). For BOPF with closed hood systems at a new or existing BOPF shop, the PM emission limit is 0.03 gr/dscf, and it only applies during periods of primary oxygen blow. The primary oxygen blow is the period in which oxygen is initially blown into the furnace and does not include any subsequent reblows. For BOPF with open hood systems, the PM emission limits are 0.02 gr/dscf for an existing BOPF shop and 0.01 gr/dscf for a new BOPF shop. These emission limits apply during all periods of the steel production cycle. The steel production cycle begins when the furnace is first charged with scrap and ends 3 minutes after slag is removed. The BOPF limits are a flow-weighted average when multiple control devices are operated in parallel.

The PM emission limits for a control device applied solely to secondary emissions from a BOPF are 0.01 gr/dscf for an existing BOPF shop and 0.0052 gr/dscf for a new BOPF shop. Secondary emissions are those not controlled by the primary emission control system, including emissions that escape from open and closed hoods and openings in the ductwork to the primary control system.

For the BOPF shop, the PM emission limit for a control device applied to emissions from ancillary operations (hot metal transfer, skimming, and desulfurization) is 0.01 gr/dscf for an existing BOPF shop and 0.003 for a new BOPF shop. The PM emission limits for ladle metallurgy operations are 0.01 gr/dscf for an existing BOPF shop and 0.004 gr/dscf for a new BOPF shop.

For the BOPF roof monitor, a 20 percent opacity limit applies to fugitive emissions from the BOPF or BOPF shop operations in an existing BOPF shop. This opacity limit is based on 3-minute

averages. For a new BOPF shop housing a bottom-blown furnace, a 10 percent opacity limit applies (6-minute average) except that one 6-minute period not to exceed 20 percent may occur once during each steel production cycle. For a new BOPF shop housing a top-blown furnace, a 10 percent opacity limit applies (3-minute average) except that one 3-minute period greater than 10 percent but less than 20 percent may occur once during each steel production cycle.

4. Capture Systems

We revised the requirements for capture systems to allow plants to choose operating parameters appropriate for assessing capture system performance, establish the values or settings for the parameters, and designate monitoring requirements. At a minimum, the limits must indicate the level of the ventilation draft and damper position settings. Plants must include information to support their selected parameter(s) in their operation and maintenance plan (including other process configurations that may be used) and certify in their performance test report that during the tests, the capture system operated at the limit(s) established in their plan.

5. Operating Limits

For bag leak detection systems, we require that corrective actions be initiated within 1 hour of a bag leak detection system alarm. For a venturi scrubber, the hourly average pressure drop and scrubber water flow rate must remain at or above the level established during the initial performance test. Plants using an electrostatic precipitator (ESP) must install and operate a continuous opacity monitoring system (COMS) according to Performance Specification 1 in 40 CFR part 60, appendix B. The average opacity for each 6-minute period must remain at or below the site-specific limit. The final rule uses a statistical approach, requiring that the limit be based on the COMS average corresponding to the 99 percent upper confidence limit on the mean of a normal distribution of average opacity values established during the initial performance test. Plants must submit information on monitoring parameters if another type of control device is used.

The final rule requires sinter plants to maintain the oil content of the feedstock at or below 0.02 percent. This limit is based on a 30-day rolling average. We are including an alternative VOC limit of 0.2 pound of VOC per ton (lb/ton) of sinter produced. This limit is also based on a 30-day rolling average.

D. What Are the Operation and Maintenance Requirements?

All plants subject to the final rule must prepare and implement a written startup, shutdown, and malfunction plan according to the requirements in 40 CFR 63.6(e). A written operation and maintenance plan is also required for capture systems and control devices subject to an operating limit. This plan must describe procedures for monthly inspections of capture systems, preventative maintenance requirements for control devices, and corrective action requirements for baghouses. To avoid potential implementation issues, we have added specific descriptions of the equipment to be inspected and a requirement to correct any deficiency or defect as soon as practicable. In the event of a bag leak detection system alarm, the plan must include specific requirements for initiating corrective action to determine the cause of the problem within 1 hour, initiating corrective action to fix the problem within 24 hours, and completing all corrective actions needed to fix the problem as soon as practicable. If applicable, the plan also must include procedures for determining and recording the sinter plant production rate.

E. What Are the General Compliance Requirements?

The final rule requires compliance with the emission limitations and operation and maintenance requirements at all times, except during periods of startup, shutdown, and malfunction as defined in 40 CFR 63.2. The owner or operator must develop and implement a written startup, shutdown, and malfunction plan according to the requirements in 40 CFR 63.6(e)(3).

The final rule also requires keeping a log detailing the operation and maintenance of the process and emission control equipment. This requirement applies during the period between the compliance date and the date that continuous monitoring systems are installed and any operating limits set.

F. What Are the Initial Compliance Requirements?

The final rule requires performance tests to demonstrate that each affected source meets all applicable emission and opacity limits. The final rule allows the owner or operator to conduct representative sampling of stacks where there are more than three stacks associated with a process (subject to approval by the permitting authority). The PM concentration (front-half filterable catch only) is to be measured using EPA Method 5, 5D, or 17 in 40 CFR part 60, appendix A. The EPA Method 9 in 40 CFR part 60, appendix A, is required for determining the opacity of emissions, with instructions for computing 6-minute and 3-minute block averages.

The final rule also includes procedures for establishing site-specific operating limits for control devices during the performance test. We have also included procedures to be followed during opacity tests to ensure capture systems operate at the limits established in the operation and maintenance plan.

The final rule requires a performance test to demonstrate initial compliance with the operating limit for the oil content of the sinter plant feedstock using OSW 846 Method 9071B (Revision 2, April 1998). Plants must sample for 30 consecutive days and compute the 30-day rolling average for each operating day. Plants electing the alternative operating limit must conduct a performance test by sampling VOC emissions and analyzing the samples according to EPA Method 25 in 40 CFR part 60, appendix A. Plants may use an alternative method that has been previously approved by the permitting authority in lieu of OSW 846 Method 9071B for oil content or EPA Method 25 for VOC emissions.

To demonstrate initial compliance with the operation and maintenance requirements, owners or operators must prepare the operation and maintenance plan, certify in the performance test report that capture systems operated at the limits established in the operation and maintenance plan, and submit their notification of compliance status. In the notification of compliance status, the owner or operator must certify that the capture systems will be operated at the limits established in the plan.

G. What Are the Continuous Compliance Requirements?

Plant owners or operators must conduct PM and opacity performance tests at least twice during each title V operating permit term (at midterm and renewal). Owners or operators also must monitor operating parameters for capture systems and control devices subject to operating limits, and carry out the procedures in their operation and maintenance plan.

To demonstrate continuous compliance with the operating limit for the oil content of sinter plant feedstock, owners or operators must determine the oil content every 24 hours (from the composite of at least three samples taken at 8-hour intervals) and compute

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and record the 30-day rolling average percent oil content of sinter feed for each operating day. Plants electing the alternative limit must determine VOC emissions every 24 hours (from at least three samples taken at 8-hour intervals) and compute and record the 30-day rolling average emissions (in lb/ton of sinter) for each operating day.

The final rule requires a continuous parameter monitoring system (CPMS) to measure and record operating parameters for capture systems subject to an operating limit. Dampers that are manually set and remain in the same position are exempt from the CPMS requirement. For dampers that are not manually set and remain in the same position, the final rule requires a daily visual check (every 24 hours) to verify they are in the correct positions.

For baghouses, owners or operators are required to monitor the relative change in PM loading using a bag leak detection system and make inspections at specified intervals. The bag leak detection system must be installed and operated according to the EPA guidance document ''Fabric Filter Bag Leak Detection Guidance,'' EPA 454/R–98–015, September 1997. The document is available on the TTN at *http://www.epa.gov/ttnemc01/cem/tribo.pdf*. If the system does not work based on the triboelectric effect, it must be installed and operated consistent with the manufacturer's written specifications and recommendations. The basic inspection requirements include daily, weekly, monthly, or quarterly inspections of specified parameters or mechanisms with monitoring of bag cleaning cycles by an appropriate method. To demonstrate continuous compliance, the final rule requires records documenting conformance with the operation and maintenance plan, as well as the inspection and maintenance procedures.

For venturi scrubbers, owners or operators must use CPMS to measure and record the hourly average pressure drop and scrubber water flow rate. For ESP, owners or operators must use COMS to measure and record the average opacity of emissions exiting each stack of the control device for each 6-minute period. Owners or operators must operate and maintain the COMS according to the requirements in 40 CFR 63.8 and Performance Specification 1 in 40 CFR part 60, appendix B. These requirements include a quality control program including a daily calibration drift assessment, quarterly performance audit, and annual zero alignment.

The final rule requires owners or operators to prepare a site-specific monitoring plan for CPMS that addresses installation, performance, operation and maintenance, quality assurance, and recordkeeping and reporting procedures. These requirements replace the more detailed performance specifications contained in the proposed rule.

To demonstrate continuous compliance, owners or operators must keep records documenting compliance with the monitoring requirements (including installation, operation, and maintenance requirements for monitoring systems) and the operation and maintenance plan.

H. What Are the Notification, Recordkeeping, and Reporting Requirements?

The notification, recordkeeping, and reporting requirements are based on the NESHAP General Provisions in 40 CFR part 63, subpart A. Table 4 to subpart FFFFF lists each of the requirements in the General Provisions (§§ 63.2 through 63.15) with an indication of whether they apply.

The plant owner or operator must submit each initial notification required in the NESHAP General Provisions that applies to their facility. These include an initial notification of applicability with general information about the facility and notifications of performance tests, performance evaluations, and compliance status.

Owners or operators are required to maintain the records required by the NESHAP General Provisions that are needed to document compliance, such as performance test results; copies of startup, shutdown, and malfunction plans and associated corrective action records; monitoring data; and inspection records. Except for the operation and maintenance plan for capture systems and control devices, all records must be kept for a total of 5 years, with the records from the most recent 2 years kept onsite. The final rule requires that the operation and maintenance plan for capture systems and control devices subject to an operating limit be kept onsite and available for inspection upon request for the life of the affected source or until the affected source is no longer subject to the final rule requirements.

We clarified the recordkeeping requirements required to demonstrate compliance with the operating limit for sinter plants. The final rule requires records of the sampling date and time, sampling values (oil content or VOC measurements), sinter produced (tons/day), and the 30-day rolling average for each operating day.

Semiannual reports are required for any deviation from an emission limitation (including an operating limit) or operation and maintenance requirement. Each report is due no later than 30 days after the end of the reporting period. If no deviation occurs, only a summary report is required. If a deviation does occur, more detailed information is required.

An immediate report is required if actions taken during a startup, shutdown, or malfunction are not consistent with the startup, shutdown, and malfunction plan. Deviations that occur during a period of startup, shutdown, or malfunction are not violations if the owner or operator demonstrates to the authority with delegation for enforcement that the source was operating in accordance with the startup, shutdown, and malfunction plan.

I. What Are the Compliance Deadlines?

The owner or operator of an existing affected source must comply by May 22, 2006. An existing affected source is one constructed or reconstructed before July 13, 2001. We changed the compliance date for existing affected sources from 2 years to 3 years after the effective date because some plants must install new capture and control systems and perform significant upgrades of primary emission control systems.

In the final rule, we have corrected a printing error that incorrectly listed the date defining a new affected source as July 23, 2001. A new affected source is one constructed or reconstructed on or after July 13, 2001. New or reconstructed sources that startup on or before the effective date of today's final rule must comply by May 20, 2003. New or reconstructed sources that startup after the effective date of the final rule must comply upon initial startup.

III. Summary of Responses to Major Comments

A. How Did We Develop the MACT Floors?

We stated in the proposal preamble that we may take alternative approaches to establish a MACT floor, depending on the type, quality, and applicability of available data. The three approaches most commonly used involve: (1) Reliance on State regulations or permit limits in conjunction with emission test data; (2) use of emissions test data alone to estimate actual emissions; and (3) use of control technology information in conjunction with emission test data to estimate actual emissions performance. In practice, regardless of what approach we select, we attempt to ensure that our emissions performance estimates reasonably characterize the level of performance that the relevant sources

consistently achieve, considering normal operational variability.

Comment. One commenter contends that EPA may use State regulations or permit limits to set floors only to the extent that such regulations and limits provide a demonstrably accurate picture of the relevant best source's actual performance. The commenter also states that EPA may only use the performance of a chosen floor technology to set floors if such technology is the only factor influencing the relevant best sources' actual performance. In addition, the floor must reflect actual performance, not what EPA thinks is achievable with a particular technology. The commenter concludes that all of EPA's floors suffer from the same basic defect in that ''. . . they do not represent the actual performance of the relevant best sources.''

Response. While EPA may use any reasonable approach to estimate the emissions control achieved in practice by the best-controlled similar source and the average emissions limitation achieved by the best-performing 12 percent of units in a category (or best 5 units for categories of less that 30 sources), we generally agree with the commenter that it is preferable to use actual performance test data to determine the MACT floor when there are adequate such data available to reasonably characterize the level of performance of the relevant sources. Our approach to identifying the MACT floors and establishing emission limits for the various emission points at integrated iron and steel facilities is consistent with this preference. Nonetheless, we did use State regulations and permit limits in some instances to help us estimate the MACT floor level of performance for certain emission points for which we have limited emission test data. However, in each case where we used such information, we also evaluated the available emission test data and other factors (such as type of control technology and the design parameters that affect performance) to confirm that the State limits reasonably reflect the actual performance of the best units.

In those instances where we had a sufficient quantity of emission test data to reasonably estimate the performance of the relevant best units, we applied a statistical approach to confirm and refine the emission estimates from proposal. This process involved application of a statistical approach to determine the average emission limitation achieved and account for normal operational variability. As described below, this approach ensures that the emissions estimates used to identify the MACT floors reasonably reflect the level of control that is actually achieved by the relevant units over time, and under the most adverse foreseeable circumstances. (The full supplemental analysis is documented in the docket.) We had adequate test data to apply this approach to the emission limits for the sinter plant windboxes, casthouse control devices, primary control systems on open and closed hood BOPF, and control devices applied to hot metal transfer, desulfurization, and ladle metallurgy.

For each of these emission points we confirmed and refined our earlier estimates of the performance of the relevant best-performing units used to identify the MACT floors. At proposal, we estimated the performance of the best-controlled sources by identifying the best control technology that had been demonstrated for each source. We then evaluated the available data for sources using the best control technology and established emission limits for new and existing sources based on the level of control that sources with the technology had achieved.

Conceptually, our approach to estimating the performance of the best-controlled units is relatively straightforward. While we believe each emissions source test gives a good indication of the level of control achieved by the control device during the time of the emissions test, we do not believe a single emissions source test can be used as an estimate of the long term emissions performance achieved by that source. Normal variations in process and control device performance and other factors, such as the inherent imprecision of sampling and analysis, which cannot be controlled, will result in variability in the performance of every source over time, including the best-performing sources. We believe that the MACT floor performance level must reasonably account for the ordinary variability in the performance of the best-controlled sources over time and under the most adverse circumstances which can reasonably be expected to occur. As such, the MACT floor performance limit must include a consideration for the variability inherent in the process operations and the control device performance.

For today's final rule, when emissions source test data were available, we used a statistical method to confirm and refine the emission estimates used at proposal to identify the MACT floors for the relevant units. For each case where emissions source test data were available, we estimated the emissions limitation achieved for each source at the 95th percentile using the one-sided z-statistic test (*i.e.*, the emission limitation which the emission point is estimated to be able to achieve 95 percent of the time). Assuming a normal distribution, the 95th percentile is 1.645 standard deviations above the mean. We chose the median of the 95th percentiles of the top-performing sources as the MACT floor. We used the median as the most representative estimate of the average emission limitation achieved by the best-performing five sources because the median points to the performance of an actual unit, with a specific combination of process operations and control device performance.

We evaluated several options to estimate the standard deviation that is needed to perform the analysis. We decided not to estimate the standard deviation for each source based on the available emissions data for just that one source since we have only three data points for most sources to use in estimating the standard deviation-one data point for each run in a three run emissions source test. Instead, we calculated a relative standard deviation (RSD) for each test and then averaged the RSD to provide our best estimate of the variability of the test data. The RSD is the standard deviation divided by the mean. The RSD provides a way to estimate the standard deviation for different values of the mean when there are too few data points to calculate the standard deviation directly. We believe this method adequately accounts for the normal variability in emissions source test data and provides a reasonable estimate of the long term emissions limitation achieved.

For new sources, the MACT floor is the emissions control that is achieved in practice by the best-controlled similar source. In order to confirm and refine our emissions estimates for new sources, we identified the best-controlled source based on test data and applied the same statistical techniques to determine the emission limitation achieved in practice for new sources. We calculated the upper 95th percentile of performance for the best-controlled source, and we chose this value as the emission limitation that can be achieved by new sources.

We believe the statistical technique used to account for general variability is appropriate and reasonable. However, we also recognize that some of the empirical test data may imply a level of accuracy that is not present throughout the entire data set. As a result, we have some reservations about identifying a MACT floor with a level of accuracy that is not warranted by the underlying data. Accordingly, we have concluded

Attachment 1
Attachment 1

that it is appropriate in some instances to round the results to two decimal places. This approach encompasses the specific statistically-derived numbers, while acknowledging that there is some residual uncertainty about the representativeness of the data. Thus, while we believe generally that our use of the 95th percentile adequately identifies the range of actual performance of individual facilities, our rounding approach should alleviate any concerns regarding whether the statistics sufficiently capture the full range of ordinary performance of the best-performing units over time and under the most adverse circumstances that can be reasonably expected to occur.

Changes resulting from rounding will have no practical effect on how industry responds to the emission limitations. That is, the control technology needed is exactly the same and the equipment must be operated in the same manner regardless of whether the numbers are rounded or not. A properly designed and operated control device will still be required to meet the rounded emission limit. Today's final rule has provisions for operating parameters and operation and maintenance plans to ensure proper operation. Thus, other than serving to better reflect uncertainties in the underlying data, the rounding has no practical impact on the stringency of the requirements.

Additional information on the statistical analysis used to confirm and refine our emissions estimates, including the data used and the complete ranking of sources, is available in the docket.

The objective of both the MACT floor methodology used at proposal, and the methodology used here to confirm and refine the proposed estimates of performance, is exactly the same. For each relevant operation at integrated iron and steel facilities, both approaches expressly are intended to provide a quantified estimate of the emission performance of the best-controlled similar source, or of the average emission limitation achieved by the relevant best-performing sources in the category, taking into consideration the ordinary and unavoidable variations in process operations and performance of the emissions control equipment.

Moreover, the conclusions growing from the supplemental statistical analysis, regarding the levels of performance that reflect the MACT floor for both new and existing units, in large measure simply confirm that the analysis underlying the proposal provided a reasonable estimation of performance.

Indeed, none of the refinements to our performance estimates will have any practical effect on how industry responds to the emission limitations. As is the case with our decision to round the emission estimates, any changes in the emission limitations in the final rule will require the same control technology as would have been needed to meet the proposed limits, and the control equipment will need to be operated in the same manner as would have been the case with the proposed emission limitations.

For three emission points (sinter cooler, sinter plant discharge end, and control devices for BOPF fugitive emissions), we had only one or two test results. Consequently, we did not have an adequate set of emissions test data to directly estimate the actual performance of the top-performing sources. Consequently, we developed the floors for these three emission points based on the facilities subject to the most stringent State regulations or permit limits, and we used the available emissions information (emissions data and a characterization of the operational processes and emissions controls) to confirm that the identified State limits reasonably reflect the actual performance of the relevant best-performing units. That is, the best units are able to achieve the required State limits but are not consistently achieving a level of emissions performance that is more stringent than the State limits. The EPA may use State limits as long as we demonstrate that such limits provide a reasonable estimate of the actual performance of the best-performing sources.

For floors based on State opacity regulations that limit fugitive emissions, we collected additional data and found that sources are achieving a level of performance that is within the current limits, but they are not consistently achieving a level of control more stringent than the identified State limits. Consequently, we believe these State limits provide an accurate picture of the best sources' actual performance considering inherent and unavoidable variability. We used this approach to develop the MACT floor for opacity from the sinter plant discharge end, blast furnace casthouse, and BOPF shop.

We provide additional rationale in the following sections where we discuss in detail the development of the MACT floors for each emission point.

1. Sinter Plant Windbox Exhaust

Comment. One commenter stated that EPA proposed an emission limitation of 0.3 lb/ton of PM based on the performance of either a baghouse or scrubber. According to the commenter, EPA's floor does not reflect the actual performance of the relevant best sources—the average emission limitation achieved by the top five sources. As shown in the BID, the average emission limitation achieved by the best-performing five sources is 0.079 pound per ton (lb/ton), not the proposed limit of 0.3 lb/ton. Second, floor reflects what EPA believed to be achievable with the control technologies and not the actual performance of the relevant best sources. Third, EPA admits that several factors other than the performance of the technologies influence emissions.

Response. As we documented in appendix B of the BID, the floor for sinter plant windboxes was based on actual source test data and the five best-performing sources. We collected test data and verified that EPA Method 5 (40 CFR part 60, appendix A) was used. We ranked the results (in lb/ton of sinter) and calculated the average of the five best-performing sources (0.3 lb/ton). Contrary to the commenter's assertion, we did not rely on control technology to identify the best-performing units or to estimate the performance of the best units. In this particular case, we had adequate test data to directly estimate the average emission limitation achieved by the five best-performing sources.

The calculation performed by the commenter is inappropriate and does not provide an accurate estimate of the emission limitation achieved by the plants. The commenter misinterpreted the information in the BID, which is not source test data, but is simply a best estimate of annual average emissions based on approximate emissions factors and the assumption that all plants operate continuously at their design capacity. Such an estimate cannot be used to represent actual performance in a MACT floor calculation.

After proposal, we reviewed our approach for developing the MACT floor and concluded that our original analysis did not sufficiently account for the normal and unavoidable variability inherent in the process operations and emission control equipment (as demonstrated by the emission test data). The average performance of the five best-performing sinter plants ranged from 0.26 to 0.32 lb/ton of sinter. To account for inherent variability, we applied the z-statistic to estimate the 95th percentile of a normal distribution for each source. The median of the 95th percentiles of the five best-performing sources is 0.4 lb/ton, which we chose to represent the MACT floor. This level of performance reasonably reflects the

average emission limitation achieved by the five best-performing sources considering inherent variability. The best-controlled source averaged 0.26 lb/ton with a 95th percentile of 0.3 lb/ton, which represents the MACT floor for new sources.

2. Sinter Plant Limit on Oil Content

Comment. Two commenters stated that the proposed limit on oil content of 0.025 percent was based on the highest oil percentage of any of the four plants for which EPA had oil percentage data. They claim this is not a valid approach because it does not represent the actual performance of the relevant best sources. One commenter recommended that EPA consider beyond-the-floor technologies for dioxin emissions, such as elimination of rolling mill scale from sinter feed, de-greasing of sinter plant feed, quality control of water used in sinter plant feed preparation, and use of low-organic waterborne rolling mill lubricants.

Response. Our research indicates that emissions of organic compounds from sinter plant windboxes are controlled by limiting the amount of oil in the sinter feed. Emission control devices applied to sinter plants are designed primarily for the removal of PM and not for the various organic compounds that are formed from the oil. We believe that oil content is the most significant factor affecting organic compound HAP emissions. Consequently, we identified the MACT floor for organic HAP emissions from sinter plants based on the level of oil content that we observed for the sinter plants with the best programs to control oil in the sinter feed.

We obtained data from four sinter plants that have implemented a program to control the oil content of the sinter feed. We then examined the data and evaluated the variability to determine the level of control that has been achieved. The average results for oil content for each plant ranged from 0.014 to 0.025 percent. These are the best-performing plants because they were the only ones that routinely sample for oil content. We applied the z-statistic and estimated the 95th percentile for each plant. (The statistical analysis considered that the limit is based on a 30-day rolling average, which reduces the inherent variability as indicated by a lower standard deviation than that associated with a single analysis of oil content.) The median of the 95th percentiles for the top-performing plants is 0.022 percent. We rounded this value to 0.02 percent, and this level represents the MACT floor for existing units. The best-performing source averaged 0.014 percent oil with a 95th percentile of 0.015 percent. We rounded this value to 0.02 percent, and this level represents the MACT floor for new units.

We reviewed opportunities for control beyond the floor. We do not believe it is practical or feasible to eliminate rolling mill scale from the sinter feed. The sinter plant provides the only opportunity to recycle and recover the raw material value. Otherwise, the mill scale would be landfilled. De-greasing or de-oiling the sinter feed has been investigated by the industry, but there is no demonstrated technology in use at any sinter plant that has proven to be successful. There is no indication that the water used in preparing the sinter feed contributes to the oil content; therefore, water quality control is not expected to have an impact on emissions of organic compounds. Waterborne lubricants may have some advantages in certain applications. However, they are problematic in some applications in the demanding environment of steel rolling mills. We could find no indication that the practices cited by the commenter have been demonstrated to reduce dioxin or other organic compound emissions. Consequently, we selected a limit on oil content as the MACT floor. We believe it is more appropriate to set a performance standard that limits oil content rather than mandating a technology that an owner or operator must use to reduce oil content. The performance standard for oil content will encourage owners or operators to investigate technologies that reduce oil content to find the most effective approach for their specific situation.

Comment. Six commenters object to the proposed limit on oil content because EPA has not shown that it is achievable by the best-performing sinter plants under the most adverse anticipated circumstances over time.

Response. As we discussed in our previous response, we confirmed and refined the MACT floor estimates using a statistical approach to account for inherent variability. Based on this approach, we believe the MACT floor has been achieved on a continuing basis by the best-performing units. In addition, the limit is enforced based on a 30-day rolling average, which further enhances achievability because it allows an occasional high daily value to be averaged with lower values on other days to achieve compliance. A 30-day rolling average also provides time to take corrective action and lower the oil content before the limit is exceeded.

3. PM Standard for Blast Furnace Casthouse Control Device

Comment. One commenter stated that the technology approach used to develop the floor does not reflect the actual performance of the relevant best sources. The commenter further states that EPA admits that there are factors other than the type of control technology that affect the actual emission control performance of blast furnace casthouse control devices. Specifically, factors affecting emissions include duration of tapping, exposed surface area of metal and slag, length of runners, and the presence or absence of runner covers or flame suppression. Thus, the performance of a baghouse cannot be representative of the best sources's actual performance.

Response. We proposed a PM standard of 0.009 gr/dscf for blast furnace casthouse control devices based on the performance of existing units using baghouses. We re-evaluated the emissions test data for blast furnace casthouses based on the statistical approach previously discussed in order to confirm and refine our emissions estimates for the best-performing units. We have test data for fugitive emissions from source tests at four casthouses. The available data clearly indicate that a baghouse is the best technology for controlling emissions from blast furnace casthouses. We reviewed the test data and the design features of these baghouses (such as air-to-cloth ratio), and we concluded that the baghouses that had been tested were among the best-performing units. The test results ranged from 0.002 to 0.0072 gr/dscf. We calculated the 95th percentile for each plant. The median of the 95th percentiles for the top-performing plants is 0.005 gr/dscf. We rounded this value to two decimal places and chose 0.01 gr/dscf to represent the MACT floor level of control for existing sources.

The best-controlled source averaged 0.002 gr/dscf with a 95th percentile of 0.0034 gr/dscf. We rounded the 95th percentile to 0.003 gr/dscf to represent the MACT floor for new sources.

4. PM Standard for BOPF Primary Control Devices

Comment. One commenter stated that the chosen floor technologies do not represent the actual performance of the relevant best sources.

Response. We proposed a PM limit of 0.019 gr/dscf for new and existing open hood BOPF primary control systems based on the performance of existing units using ESP. We re-evaluated the emissions test data for open hood BOPF using the statistical approach previously

discussed, in order to confirm and refine our emissions estimates for the best-performing units. The available data clearly indicate that ESP perform better than venturi scrubbers in controlling emissions from open hood shops. We have test data for five ESP that are similar in design, each of which, based on design and operating data, are among the best-performing units at open hood shops. The data include multiple tests at some plants, and these data indicate there is variability in performance from test to test and from run to run. The plant averages ranged from 0.007 to 0.019 gr/dscf, and individual tests (three-run averages) ranged from 0.004 to 0.019 gr/dscf. We calculated the 95th percentile for each plant. The median of the 95th percentiles for the top-performing plants is 0.019 gr/dscf. We rounded this value to two decimal places and chose 0.02 gr/dscf to represent the MACT floor for existing units.

The best-controlled open hood shop averaged 0.0066 gr/dscf with a 95th percentile of 0.01 gr/dscf, which we chose to represent the MACT floor for new sources.

We proposed a limit of 0.024 gr/dscf for new and existing closed hood BOPF primary control systems based on the performance of existing units using venturi scrubbers. All of the closed hood shops use venturi scrubbers as the primary control device. The test data and design information indicated that shops having high-energy venturi scrubbers with a pressure drop of 50 inches of water or more are the best-performing sources. We have recent test data for only one closed hood shop. However, we have data from 1971 to 1978 for high-energy venturi scrubbers on closed hood shops. These data include four BOPF shops that are currently operating. The test results range from 0.021 to 0.024 gr/dscf. For purposes of today's final rule, we did not include Kaiser Steel because the plant has been closed for several years. We calculated the 95th percentile for each plant. The median of the 95th percentiles for the top-performing plants is 0.027 gr/dscf. We rounded this value to two decimal places and chose 0.03 gr/dscf to represent the MACT floor for existing sources.

The best-controlled closed hood shop averaged 0.021 gr/dscf with a 95th percentile of 0.027 gr/dscf. We rounded the 95th percentile to two decimal places and chose 0.03 gr/dscf to represent the MACT floor for new sources.

Comment. Six commenters said EPA used test data dating from 1971 through 1978 to establish the limit for closed hood systems. These commenters believe the data do not reflect current configurations or actual performance and cannot be used to establish the floor. Many systems have been upgraded to increase capture efficiency (including some furnaces used to establish the standard). Because there are little or no data for these sources, the commenters recommend that EPA use existing State implementation plans (SIP) to determine the floor. Another commenter agrees, adding that the test data used to support the 0.024 gr/dscf limit ranged up to 0.031 gr/dscf and represent the minimum anticipated variation of emissions from a MACT floor technology source. The proposed limit is more stringent than existing SIP and may not be achievable by plants using MACT floor controls. The analysis does not consider the current PM limit of 0.03 gr/dscf for plants in Ohio, which the commenter believes should be the limit.

Response. The test data for closed hood shops are not just from tests in 1971 to 1978—there is a 1992 test for Geneva Steel. The commenters did not provide any information on the nature of the upgrades or rationale as to their effect on emissions. For closed hood systems, testing is performed only during the oxygen blow with the capture hood tightly fitted to the furnace. Our understanding is that capture system upgrades have been made primarily to improve the capture of fugitive emissions from charging and tapping, which are not included in the performance testing for closed hood furnaces. In addition, the operating conditions of the scrubbers during the tests (*e.g.*, pressure drops of 50 inches of water or more) are representative of the way these scrubbers are currently operated. Data for venturi scrubbers in other similar processes indicate that high-pressure drop scrubbers can achieve control levels of 0.03 gr/dscf or less. We believe the statistical approach that we used to confirm and refine emissions estimates for the floor analysis accounts for inherent variability over time. We believe that source test data provide a better picture of actual performance than the use of State limits as the commenter suggests. Moreover, based on our analysis of the emission tests, we have identified as MACT an emissions limit of 0.03 gr/dscf which is consistent with the emissions limits that the commenters identified as appropriate.

5. PM Standards for Ancillary Operations at BOPF Shops

Comment. According to eight commenters, the three data points for hot metal transfer and desulfurization are not sufficient to define the floor, accurately represent current operating conditions, or reflect a level that is consistently achievable under the most adverse foreseeable circumstances over time. If sufficient data are not available, EPA should use existing State limits, if it can show that the level of control is realistically achievable under the most adverse anticipated circumstances over time. The commenters also question that the data used for characterizing performance were collected using the same test procedures specified in the proposed rule (average of three 1-hour tests during actual operation of the processes). Using data from a test method other than the required compliance method to set a standard does not meet CAA requirements.

Response. We proposed a PM standard of 0.007 gr/dscf for a control device serving BOPF ancillary processes based on the performance of existing units using baghouses. We reviewed the emissions data and confirmed the tests were conducted using EPA Method 5 (40 CFR part 60, appendix A). Every test result was presented as the average of three runs, which is consistent with our performance test requirements. Several test reports confirmed that sampling was conducted under normal operating conditions, and none of the reports indicated conditions were not normal. The tests used a sampling time of 1 hour or more to ensure an adequate sample volume was collected. As explained earlier, in response to another comment, EPA believes that it is preferable to use actual performance test data to determine the MACT floor when there are adequate such data available to reasonably characterize the level of performance of the relevant sources. The commenters did not provide us with any additional facts or data to show that any of the data we relied upon are invalid. For the reasons described above, we believe that these data are adequate to reasonably estimate the performance of the best sources for purposes of establishing a MACT floor, and these estimates more accurately reflect the actual performance of the best-performing sources than would estimates based on State permit data. Moreover, the approach that we used to confirm and refine the emissions estimates for the top-performing sources assures that we have adequately accounted for variability over time, and, therefore, addresses the concerns of the commenter.

We re-evaluated the emissions test data for ancillary operations based on the statistical approach previously discussed, in order to confirm and

refine our earlier analysis. At proposal, we considered the combined data for hot metal transfer/desulfurization and ladle metallurgy. However, we believe it is necessary to separate the two operations because hot metal transfer/desulfurization is performed on molten iron before charging to the BOPF. Ladle metallurgy is performed on molten steel from the BOPF. Consequently, the two processes have different emission characteristics which suggests each should have a separate MACT floor determination.

We have test data from three source tests of desulfurization and hot metal transfer. The control device used in these source tests, and the only type of control used for these processes, is a baghouse. We reviewed the test data and the design features of these baghouses (such as air-to-cloth ratio), and we concluded that the baghouses that had been tested were among the best-performing units. The three tests ranged from 0.0016 to 0.012 gr/dscf. We calculated the 95th percentile for each plant. The median of the 95th percentiles for the top-performing plants is 0.006 gr/dscf. We rounded this value to two decimal places and chose 0.01 gr/dscf to represent the MACT floor for existing units.

The best-controlled source averaged 0.0016 gr/dscf with a 95th percentile of 0.003 gr/dscf, which we chose to represent the MACT floor for new sources.

We have test results for six source tests of typical ladle metallurgy operations. As with desulfurization, the control device used in these source tests, and the only type of control used for these processes, is a baghouse. We reviewed the test data and the design features of these baghouses (such as air-to-cloth ratio), and we concluded that the baghouses that had been tested were among the best-performing units. The five best-performing units ranged from 0.0021 to 0.0047 gr/dscf. We calculated the 95th percentile for each plant. The median of the 95th percentiles for the top-performing plants is 0.006 gr/dscf. We rounded this value to two decimal places and chose 0.01 gr/dscf to represent the MACT floor for existing units.

The best-controlled source with typical ladle metallurgy operations (lance injection, electromagnetic stirring, and alloy addition), averaged 0.0021 gr/dscf with a 95th percentile of 0.004 gr/dscf, which we chose to represent the MACT floor for ladle metallurgy for new sources.

6. Opacity Standard for Sinter Plant Discharge End

Comment. According to one commenter, EPA does not explain how the floor determination represents an accurate picture of the relevant best sources' actual performance, or how it knows that the best sources are not doing better than their permits require.

Response. We proposed an opacity limit of 20 percent for the sinter plant discharge end based on the five sources subject to the most stringent existing State regulations or permit limits. One plant has a 10 percent opacity limit, and four plants have a 20 percent opacity limit. We chose the median (20 percent) to represent the MACT floor.

A total of six of the seven operating plants use a capture and control system vented to a baghouse for the discharge end, and engineering knowledge of their design features and the nature of emissions indicate that these baghouses are the best demonstrated control technology for the discharge end. Following the end of the comment period, in order to confirm the appropriateness of the proposed opacity limit, we surveyed the industry to obtain additional opacity data for the discharge end. The only substantive data we obtained was from Ispat-Inland, which submitted the results of 1,745 hours of observations by EPA Method 9 (40 CFR part 60, appendix A) conducted over 4 years (1997 to 2000). Ispat-Inland is among the better-performing plants because it controls the discharge end, crusher, and hot screen by capturing emissions using local hooding and ventilation and venting them to a baghouse for collection. Consequently, we believe that the control system at Ispat-Inland is representative of the best-performing sources.

At Ispat-Inland, approximately one percent of the hourly opacity observations had a 6-minute average that exceeded 20 percent opacity, and the plant met the proposed limit 99 percent of the time. Although many of the observations were below 20 percent opacity, the limit accommodates the normal variability in the process operations and control equipment. The data clearly show that Ispat-Inland is not consistently performing substantially better than what their permit requires and that our proposed limit is a reasonable picture of what the best-controlled sources can achieve.

Comment. Seven commenters contend that EPA has not shown that existing State limits are consistently achievable under the worst foreseeable conditions over time. The commenters claimed that opacity data they submitted to EPA demonstrates that the limits are not consistently achievable by well-operated and maintained sinter plants. The EPA must reevaluate the achievability of the proposed opacity standard.

Response. None of the commenters provided evidence that facilities subject to the identified State limits have been unable to meet those limits (*e.g.*, in the form of reported violations). Moreover, as discussed in the previous response, approximately 99 percent of the hourly opacity observations at Ispat-Inland never had a 6-minute average in excess of 20 percent opacity. Performance improved to 99.9 percent compliance for more recent, 1998 to 2000, observations. As stated previously, these data show that the opacity limit based on existing State limits is achievable because it has been achieved on a continuing basis. Our analysis considered all of the data that we could obtain, and the only data available was that for Ispat-Inland which we discussed in detail.

7. Opacity Standard for Blast Furnace Casthouse

Comment. One commenter states that we failed to explain how the floor we selected reflects the best-performing 12 percent of the blast furnace casthouses. The commenter further states that we failed to pursue and collect from the affected sources or State and local agencies available opacity data, and we undermined the floor-setting process of the CAA.

Response. For blast furnace casthouses, we established the MACT floor as a 20 percent opacity limit based on the five sources subject to the most stringent existing State regulations or permit limits. Two casthouses are subject to a 15 percent opacity limit, and the next most stringent limit is 20 percent, which is applied to 22 of the 37 blast furnace casthouses.

Following the end of the comment period, in order to confirm the appropriateness of the proposed opacity limit, we obtained additional opacity data for operating blast furnace casthouses to supplement the limited data we had available at proposal. We now have opacity data for 25 of the 37 existing blast furnace casthouses, and the data range in coverage from a 1-hour test to several years of observations. (Although there were 39 blast furnace casthouses at proposal, two have subsequently shut down.) We closely examined the data that covered a reasonably long period of time (*e.g.*, at least 1 year to capture seasonal variations), which included 12 of the 25 casthouses for which we had data. We

believe it is important to account for seasonal variations and examine data covering 1 year or more to account for variability due to differences in ventilation rates, weather conditions, and changes in the process over time. We found that the casthouses with the lowest opacities were those with secondary capture and control systems. For some casthouses, most of the 6-minute averages were routinely below the proposed 20 percent limit with occasional readings that approached or exceeded 20 percent. The blast furnace casthouses at U.S. Steel (Gary) achieved the 20 percent opacity limit 99 to 100 percent of the time. One blast furnace casthouse had a maximum 6-minute average of 21 percent opacity, and another casthouse had a maximum of 20 percent opacity. At Ispat-Inland, the casthouses achieved 20 percent opacity 98 to 99.6 percent of the time. At LTV Steel, the casthouses achieved 20 percent opacity 99.5 to 99.8 percent of the time. These blast furnaces were achieving the 20 percent limit, but they were not demonstrably able to consistently achieve a level of performance more stringent than this limit. Consequently, the opacity data confirm that the 20 percent opacity limit based on the median value of the sources with the five most stringent emission limits is an accurate reflection of the MACT floor.

Comment. Eight commenters contend that the limits are not consistently achievable under the worst foreseeable conditions over time even by the casthouses used to establish the MACT floor. In support, the commenters claimed they had provided opacity data showing that the limits have not been consistently achieved by well-operated and maintained casthouses. Achievability of the opacity limit for blast furnace casthouses is of particular concern because the process is subject to infrequent but significant swings in emission rates. The commenters recommend that EPA collect and analyze all available opacity data from States, Regions, and industry and determine the standard based on achievability. They recommend using a statistically-derived limit based on a high confidence level (the 99.97th percentile) to avoid an unachievable standard that would result in many violations.

Response. Following proposal, in order to confirm the appropriateness of the proposed opacity limit, we collected additional opacity data and identified the best-performing sources in terms of low opacity. Our analysis considered all of the opacity data submitted by the commenters and data obtained from other sources. For the five best-performing blast furnace casthouses (*i.e.*, lowest opacities) with observations over at least 1 year, a 20 percent opacity limit was achieved for 99 to 99.8 percent of the time. We believe the data clearly show that an opacity limit of 20 percent represents what has been achieved by the best-performing sources and that it can be achieved on a continuing basis.

8. Opacity Standards for BOPF Shops

Comment. Eight commenters contend that the limits are not consistently achievable under the worst foreseeable conditions over time. They claim that opacity data submitted to EPA by the industry demonstrate that the limits are not consistently achieved by well-operated and maintained BOPF shops, and as a result, EPA must reevaluate the achievability of the proposed opacity standards.

Response. Following proposal, in order to confirm the appropriateness of the proposed 20 percent opacity limit, we obtained additional opacity data for operating BOPF shops to supplement the limited data we had available at proposal. We now have opacity data for 19 of the 23 existing BOPF shops ranging in coverage from a single 2-hour test to multiple tests covering several years of observations. Our analysis considered all of the opacity data submitted by the commenters and data obtained from other sources. We examined the data and found that the best-controlled BOPF shops were those with secondary capture and control systems. In contrast, several BOPF shops without secondary controls experienced frequent exceedances of the 20 percent opacity limit. A total of eight BOPF shops have capture systems for secondary emissions that are vented to baghouses. We re-evaluated the data to determine the appropriateness and achievability of the proposed 20 percent opacity limit. We focused on BOPF shops for which we had a reasonable amount of long-term data. Specifically, we examined opacity data only from shops for which we had 12 months or more of observations (*i.e.*, all seasons of the year), which included observations for 11 of the 23 existing shops. The five best-performing shops achieved the limit 99.5 to 99.98 percent of the time. These data clearly indicate that the best-performing units in the category achieve the proposed opacity limit (but do not achieve a more stringent level of control), and, therefore, that the State limits are a good proxy for actual best performance. Thus, we are confident that the proposed opacity limit of 20 percent is achievable and that it provides an accurate picture of the actual performance achieved by the best-performing sources.

Our analysis of the opacity data for BOPF shops indicated that opacity observations are routinely made over several consecutive steel production cycles. In the proposal, we had included a provision that the opacity observations during the performance test did not have to be consecutive. In today's final rule, we have removed the provision which allowed non-consecutive observations. This is consistent with the opacity data used to support the opacity limit and with the procedures routinely used to make opacity observations for BOPF.

9. Sinter Cooler Stack

Comment. Six commenters note that one of the plants used to calculate the MACT floor is permanently shut down. Consequently, the floor analysis does not reflect the SIP requirements for actual operating sources. In addition, EPA has not shown that the proposed standard is achievable by the best-performing sources under the foreseeable range of operating conditions.

Response. Our investigation into this comment indicates that all five of the sinter plants listed in Table B–11 of the BID are operating (Ispat-Inland at East Chicago, IN; WCI Steel at Youngstown, OH; Bethlehem Steel at Sparrows Point, MD; U.S. Steel at Gary, IN; and AK Steel at Middletown, OH). Because we had only limited test data, we based the MACT floor on the average of the top five sources subject to the most stringent existing State regulations or permit limits. One plant has a limit of 0.01 gr/dscf (for one-half of its cooler), three of the five best-performing plants are subject to a limit of 0.03 gr/dscf, and one plant has a lb/hr limit that is equivalent to about 0.05 gr/dscf. The average and median limit applied to the top five plants is 0.03 gr/dscf. Although our data are limited, they show that the proposed emission limit is achievable and has been achieved based on the available test results. Nationwide, baghouses are used at three plants, a cyclone at one plant, and three plants are uncontrolled. Consequently, the best-performing plants and the median of the top five would be a plant with a baghouse. A test at WCI Steel, which controls these emissions with a baghouse, ranged from 0.005 to 0.02 gr/dscf and averaged 0.009 gr/dscf. The results for WCI show significant variability in the run-to-run results, which range up to 0.02 gr/dscf. The test results indicate that the better-controlled plants can achieve the limit

of 0.03 gr/dscf; however, considering the high variability from run to run, the plant is not substantially overachieving the limit.

No commenters provided any evidence that the existing State limits were not being achieved on a continuing basis (*e.g.*, in the form of violation reports), and we have no evidence that any facility has been in violation of the existing State limits. Consequently, we believe the floor based on State limits represents a reasonably accurate picture of what the best-performing sources have and continue to achieve. For new sources, we chose a limit of 0.01 gr/dscf based on the most stringent State limit. The average test results for WCI Steel (0.009 gr/dscf) show that this limit is achievable by a properly-designed and operated baghouse.

10. PM Standard for Sinter Discharge End Control Device

Comment. According to one commenter, EPA claims it has PM test data from six plants, but asserts in the preamble that it has credible test data for only one plant and never explains why data for only one plant is credible. The EPA does not explain how this represents an accurate picture of the relevant best sources' actual performance, or how it knows that the best sources are not doing better than their permits require.

Response. The reference to test data in the BID is correct; however, use of the term ''test data'' in the BID was not correct. We had estimates of PM emissions from the discharge end from several plants based on emission factors that they supplied in a survey questionnaire. However, these estimates were not supported by the use of reference methods for sampling and analysis or substantiated by emission test reports. For units in this category, it is not feasible to use estimates based on typical emission factors to identify the level of control that a plant routinely achieves. Therefore, this information is of no practical value for purposes of identifying the best-performing sinter discharge ends. We found the only test data we could validate for the discharge end was for the EPA test conducted at WCI Steel. The results of this test support our conclusion that the existing State limits reasonably approximate actual emissions and performance. However, we have no indication or expectation that the best-performing plants are achieving a level of control more stringent than the proposed emission limit. Consequently, we based the floor on the most stringent State limits.

Comment. Seven commenters state that three of the nine sinter plants in the existing population are now shut down, including one of the five plants used to calculate the floor for the discharge end. The commenters assert that EPA must recalculate the floor to reflect only operating sources. Also, EPA must show that the standard is consistently achievable by the best-performing sources under the foreseeable range of operating conditions.

Response. We agree that one of the five best-performing plants (Wheeling-Pittsburgh Steel) used to determine the floor was shut down at the time of the floor analysis. We elected to re-calculate the floor and exclude this plant. We determined that the floor based on the average of the five best-performing sources remains the same (0.02 gr/dscf). One plant is subject to a limit of 0.01 gr/dscf, two plants are subject to a limit of 0.02 gr/dscf, one is subject to 0.03 gr/dscf, and the fifth plant has a mass rate limit that is equivalent to about 0.04 gr/dscf. The average and median value associated with the top five limits is 0.02 gr/dscf. We have detailed design information for the baghouses applied to the discharge end, and our engineering analysis of the design information, coupled with test data for baghouses in similar applications, indicates that these controls can achieve 0.02 gr/dscf under the foreseeable range of operating conditions. Although we have test data for only one baghouse, the test averaged 0.006 gr/dscf and further supports the achievability of the MACT floor. We based the MACT floor for new sources on the most stringent State limit of 0.01 gr/dscf. Again, the available test data indicate that this limit can be achieved by a properly-designed and operated baghouse.

11. PM Standard for BOPF Fugitive Emissions

Comment. One commenter stated that EPA does not explain how the floor determination represents an accurate picture of the relevant best sources' actual performance, or how it knows that the best sources are not doing better than their permits require.

Response. We have test data for only one baghouse applied to BOPF fugitive emissions, and because of the nature of the test, the results are not useful for determining the MACT floor. During the test, sampling was performed continuously over a 3-hour period, even when the furnace was not operating and when fugitive emissions were not occurring. Consequently, the reported concentrations for the baghouse outlet are unrepresentative of the concentrations that would be measured when fugitive emissions from charging and tapping are occurring. Because of the lack of data, we based the floor on existing State limits and have made no changes to the proposed emission limits. We chose 0.01 gr/dscf as the floor from the median of the five sources with the most stringent limits (one at 0.0052, one at 0.006, two at 0.01, and one at 0.012 gr/dscf). One unit is subject to the most stringent State limit of 0.0052 gr/dscf, and we selected this limit as the MACT floor for new sources. These limits are achieved by using a capture system vented to a baghouse, and these levels are consistent with the performance of well-designed and operated baghouses. We have no evidence that plants are violating their current limits, and we have no indication they are achieving a level of control more stringent than the identified State limits. This observation is consistent with an EPA design manual for baghouses which states that typical outlet concentrations for all applications range from 0.001 to 0.01 gr/dscf (depending primarily on the design parameters).

B. What Surrogates Did We Use for HAP?

1. PM for Metal HAP

Comment. One commenter contends that PM is not a valid surrogate for HAP metal compounds and that specific limits for individual metals should be established. In support, the commenter points to other rules where EPA has recognized that PM is not a valid surrogate for mercury, lead, and cadmium because of their volatility and that these emissions cannot necessarily be controlled merely by controlling PM emissions. Consequently, EPA cannot claim PM is a valid surrogate for metal HAP in the final rule or that setting standards for individual metals would ''. . . achieve little, if any, HAP emission reduction beyond what would be achieved using the surrogate pollutant approach based on total PM.'' Because EPA has already recognized that PM is not an adequate surrogate for mercury, lead, and cadmium, EPA must set individual emission standards for such HAP.

Response. We disagree with the commenter and believe that PM is a valid surrogate for the HAP metal compounds emitted from integrated iron and steel sources. The rationale in the preamble for the hazardous waste combustors (HWC) rule is unique to that source category and does not apply to the metal HAP emissions and controls in the integrated iron and steel industry.

The preamble for the final HWC rule makes this point clearly:

> . . . However, for sources not burning hazardous waste and without a significant potential for extreme variability in metals feed rates, PM is an adequate surrogate for metal HAP (*e.g.*, for nonhazardous waste burning cement kilns).[1]

Hazardous waste combustors are unique and different from integrated iron and steel sources in several respects:

- They have significant levels of volatile and semi-volatile HAP metal compounds in the waste-derived fuels being burned,
- The feed rate of these metals can be highly variable, and
- The high temperatures in the combustion process can volatilize semi-volatile metals and form fine PM, which can be harder to control. In contrast, the raw materials used in iron and steel processes have relatively low levels of metal HAP, the level of metal HAP does not vary significantly as do the HAP metals in waste materials fed to HWC, and test data indicate that PM control devices effectively control the HAP metals from iron and steel processes.

A key parameter for the control of both semi-volatile and non-volatile metal compounds is the operating temperature of the air pollution control device that is applied. At temperatures of 200 to 400°F, the range typical of control devices applied to emissions from integrated iron and steel processes, any semi-volatile and non-volatile HAP metal compounds present would exist in the form of fine PM, and, therefore, will be controlled in direct relationship to PM.

Mercury is an exception because of its high volatility. However, we have no data that show any significant emissions of mercury from integrated iron and steel plants, and there is no reason to suspect its presence in any appreciable quantities in emissions from ironmaking and steelmaking. In the two sinter plant tests we conducted, we sampled and analyzed for mercury. The results showed only trace levels of mercury (7×10^{-7} to 2×10^{-6} gr/dscf). Thus, we believe that mercury emissions from integrated iron and steel sources are negligible and that the performance of these units with respect to any trace levels of mercury can not be measurably improved. Moreover, no iron and steel plants operate an emissions control system that would further reduce these trace amounts of mercury emissions, or otherwise take any steps that would reduce such emissions. Because no units currently reduce mercury emissions from the integrated iron and steel industry, the MACT floor for mercury (for both new and existing sources) would be no reduction in emissions. Because the mercury concentrations are already so low, no technically feasible control technologies can be identified that could reduce these trace levels of mercury emissions. Therefore, no mercury emissions standards are proposed for integrated iron and steel sources.

2. Oil Content for Organic HAP

Comment. Two commenters urged us to establish emission standards for specific organic HAP, including dioxin, in lieu of the oil content limit. One commenter contends that the proposed rule should contain emission limits for the many organic HAP emitted from iron and steel plants, including dioxin, polycyclic organic matter, benzene, and toluene. The proposed operating requirement for sinter plants is not an emission standard and does not satisfy CAA requirements. Furthermore, regulations pursuant to section 112 of the CAA must include emission standards for each HAP emitted from an affected source category. The commenter adds that EPA provided no data in support of the proposed approach for controlling dioxin emissions. This commenter believes the proposed rule effectively ignores organic HAP in contradiction of CAA requirements because vapor phase organics are not removed by the fabric filters or wet scrubbers.

Several commenters contend that EPA has not met its requirements to show a correlation between the surrogate to be controlled and the object of control. Two commenters state that EPA has not provided sufficient data to demonstrate a correlation. Eight other commenters do not believe that there is a correlation to dioxin emissions or that control of the oil and grease would reduce HAP organic emissions. In support, they claim data from one plant (Bethlehem Steel, Sparrows Point) show no VOC increase in windbox emissions as oil content increases.

Response. The only available data regarding organic HAP emissions from these units are from two tests we conducted. These tests are insufficient to generate a meaningful characterization of emission control levels that can be achieved under varying process conditions over time, and there is no way to use this emissions test data to identify the best-performing plants. Moreover, the add-on emission controls used by units in the category (baghouses and venturi scrubbers) do not control vapor phase organic compounds. As a result, we believe that the best way to assess current levels of VOC emission control, and to limit such emissions is to rely upon existing methods of pollution prevention. Accordingly, we have established limits on the amount of organic HAP precursor material (specifically oil and grease) that may be in the sinter feed, in order to control emissions of organic compounds. Additionally, section 112(d)(2) of the CAA specifically allows EPA to establish MACT standards based on emission controls that rely on pollution prevention techniques.

We have added information to the docket from a European study that shows dioxin emissions are related to oil content-emissions increase as the oil content increases. We have also added information from two U.S. sinter plants that show VOC emissions increase as oil content increases, and the VOC contains volatile HAP such as benzene. In fact, plants in Indiana control VOC emissions by limiting the amount of oil in the sinter feed. Because the two are related, Indiana allows monitoring oil content as an alternative to VOC monitoring. In the past, sinter plants with baghouses have voluntarily limited oil content because the organic compounds that were emitted tend to condense and blind the bags as well as pose a fire hazard. We believe these studies conclusively show that oil content correlates with organic emissions.

An emission limit for individual organic compounds is not practical because the emission controls that are used do not effectively control all organic HAP. Conventional control systems used for organics, such as incineration or carbon adsorption, would not be practicable because they are ineffective at the very low concentration (parts per million levels) in the windbox exhaust stream. On the other hand, a limit on oil content effectively limits emissions of organic HAP, and control of oil content is a proven emission control measure. Consequently, in this instance, we believe that a limit on oil content is the only feasible way to ensure that all plants achieve the MACT level of control for organic HAP from the sinter plant windbox exhaust.

C. Is a Risk Analysis Warranted?

Comment. Seven commenters urge EPA to perform a risk assessment under section 112(d)(4) of the CAA for manganese to determine if HAP controls are necessary. Manganese is a health threshold pollutant, and there is little likelihood of chronic or widespread

[1] See Footnote 40 in preamble to the final HWC rule (64 FR 52846, September 30, 1999).

Attachment 1
Attachment 1

exposure at concentrations above the threshold at iron and steel plants. The EPA conducted this analysis for the pulp and paper standards and decided not to regulate hydrogen chloride emissions. According to the commenters, risk-based standards under section 112(d)(4) would result in no standards, or less stringent and more cost effective standards.

Response. Section 112(d)(4) of the CAA provides EPA with authority, at its discretion, to develop risk-based standards for HAP ''. . . for which a health threshold has been established,'' provided that the standard achieves an ''ample margin of safety.'' Section 112(d)(4) says:

> [w]ith respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold level, with an ample margin of safety, when establishing emission standards under this subsection.

As EPA has indicated in the past (*see* 63 FR 18754 and 67 FR 44713), we generally apply section 112(d)(4) of the CAA only to HAP that are not carcinogens because Congress clearly expected that carcinogens would be non-threshold pollutants. The legislative history further indicates that if EPA invokes this provision, it must assure that any emission standard results in ambient concentrations less than the health threshold, with an ample margin of safety, and that the standards must also be sufficient to protect against adverse environmental effects. (*See* S. Rep. No. 228, 101st Cong. at 171.) The EPA is not to consider cost in establishing a standard pursuant to section 112(d)(4).

Therefore, EPA believes it has the discretion under section 112(d)(4) of the CAA to develop risk-based standards for some categories emitting threshold pollutants, which may be less stringent than the corresponding floor-based MACT standard would be. Where EPA develops standards under this provision, we seek to ensure that emissions from every source in the category or subcategory are less than the threshold level to an individual exposed at the upper end of the exposure distribution. We believe that assuring protection to persons at the upper end of the exposure distribution is consistent with the ample margin of safety requirement in section 112(d)(4). (*See* 63 FR 18754 at 18768.)

However, the EPA emphasizes that use of section 112(d)(4) of the CAA authority is wholly discretionary. As the legislative history described above indicates, cases may arise in which other considerations dictate that the Agency should not invoke this authority to establish less stringent standards, despite the existence of a health effects threshold that is not jeopardized. For instance, EPA does not anticipate that it would set less stringent standards where evidence indicates a threat of significant or widespread environmental effects, although it may be shown that emissions from a particular source category do not approach or exceed a level requisite to protect public health with an ample margin of safety. The EPA may also elect not to set less stringent standards where the estimated health threshold for a contaminant is subject to large uncertainty. Thus, in considering appropriate uses of its discretionary authority under section 112(d)(4), EPA considers other factors in addition to health thresholds, including uncertainty and potential adverse environmental effects, as that phrase is defined in section 112(a)(7) of the CAA.

For several reasons, in this case, we have decided not to exercise our discretion to consider existing threshold levels for manganese in setting the emission standards for metal HAP compounds from integrated iron and steel facilities. This decision is appropriate because we have insufficient data about the nature and degree of public exposures to these emissions, including background exposure levels and other relevant factors, to meaningfully consider whether maximum exposures to manganese emissions from integrated iron and steel facilities would remain below the relevant threshold. In fact, it is clear that facilities in this source category emit significant quantities of manganese, totaling about 250 tpy. Because the commenters did not provide us with any of the detailed site-specific information that we would need to perform an adequate assessment of emissions and exposures, we have concluded that it would be inappropriate to consider the threshold nature of manganese in establishing MACT standards for the integrated iron and steel source category. Additionally, the commenters have supplied no information about the environmental impact of metal emissions from integrated iron and steel plants, and we have no data upon which we can rely for such an environmental assessment.

Moreover, even if we had access to more detailed data regarding emissions, exposures, and environmental impact, it is not clear whether consideration of the manganese health threshold would have any practical effect on the MACT standards established in today's final rule. In particular, emissions from integrated iron and steel plants include metal HAP besides manganese that are not threshold pollutants (including lead, nickel, and chromium compounds), and these pollutants are controlled using the same control technologies that reduce emissions of manganese. As with manganese, we have no data regarding maximum exposures or environmental impacts from such emissions at integrated iron and steel facilities, and we have no data specifically characterizing these metal emissions. These plants emit about 360 tpy of HAP metal compounds—including about 111 tpy of lead, nickel and chromium compounds. Certain lead, nickel and chromium compounds are listed as carcinogens and have no applicable human health threshold. For additional information, see our guidance document entitled ''Guidance on the Major Source Determination for Certain Hazardous Air Pollutants'' available on our Web site at *http://www.epa.gov//ttn/oarpg/t3/memoranda/agghapmem.pdf*.

Today's final rule controls all metal HAP emissions (including lead, nickel, and chromium) by using PM as a surrogate. Because we use PM as a surrogate, eliminating only one or some of the metal HAP from consideration would have little if any practical impact on the MACT standards. Consequently, we believe the MACT standards finalized today are appropriate and will reduce emissions of all HAP at integrated iron and steel plants to the levels currently being achieved by the best-performing facilities.

D. How Did We Revise the Emission Limitations?

1. Sinter Cooler Emissions

Comment. Seven commenters explain that some exhaust systems on the sinter plant discharge end are designed to capture emissions at the point where sinter is loaded onto the sinter cooler and portions of the sinter cooler itself. In situations where cooler emissions are exhausted in part or in whole to the discharge end control system, the commenters request that the cooler stack emissions standard of 0.03 gr/dscf (for existing facilities) apply to the discharge end baghouse.

Response. We disagree and have written the final rule to clarify that the limit of 0.02 gr/dscf for the discharge end applies even when other emissions are ducted to the control device. The most effective technology for controlling emissions from the discharge end is a baghouse, and a properly-designed and operated baghouse can achieve 0.02 gr/dscf on a continuing basis. An emission limit of 0.03 gr/dscf is too high to be representative of the MACT floor, and

does not reflect what is currently achieved by the five best-performing sources.

2. Sinter Plant Oil Content Requirement

Comment. Sinter plants in Maryland and Indiana already must comply with rules that regulate the oil and grease content for the sinter plant raw material blend. The rules limit VOC emissions to no more than 0.25 lb/ton of sinter (except Indiana allows 0.36 lb/ton during non-ozone season). Maryland requires VOC testing and Indiana provides the option of VOC testing or sampling for oil content. Seven commenters recommend VOC testing as an option in the final rule because most plants in these states already use them; some comments also suggest a 30-day rolling average for VOC.

Response. We reviewed data submitted by two plants that showed VOC emissions correlated with oil content. LTV Steel (now owned by International Steel Group) performed simultaneous testing of oil content and VOC emissions, correlated the results, and showed that an oil content of 0.024 percent was equivalent to the State VOC limit of 0.25 lb/ton of sinter. As a result, the State allowed them to use alternative monitoring procedures. Based on our review of the data, we believe that maintaining the VOC at a level of 0.2 lb/ton or lower will ensure that the operating limit of 0.02 percent oil is maintained. Consequently, we have written the final rule to include an alternative emission limitation for VOC of 0.2 lb/ton of sinter. A plant electing the alternative limit is required to measure VOC emissions (total gaseous nonmethane organics as carbon) in source emissions using EPA Method 25 in 40 CFR part 60, appendix A (or a previously approved method). As with the oil content, the VOC limit is based on a 30-day rolling average. The 30-day average provides additional flexibility because it allows an occasional high daily value to be averaged with lower values on other days to achieve compliance. We believe the 30-day average accounts for day-to-day variability and enhances the achievability of the limit.

3. ESP Operating Limit

Comment. For plants required to use COMS to monitor ESP, the proposed rule establishes an enforceable operating limit based on the opacity observed during the initial performance test. Eight commenters argue that COMS data should not be used for compliance determinations because of measurement uncertainties and unreliability. They point to the recognized limitation for measuring opacity below 10 percent and provide supporting data comparing COMS measurements in ESP stacks to EPA Method 9 data. Like the steel pickling MACT standard, COMS data should be used only to indicate if the ESP is operating properly and to institute corrective action as appropriate; subsequent EPA Method 9 observations may be appropriate in the event of a high number of measured excursions. These commenters also object to the operating limit for ESP equipped with COMS because EPA has not demonstrated a correlation between opacity and PM emissions from BOPF controlled by ESP to support using opacity as a surrogate for PM. A COMS opacity reading that is above that observed during a performance test does not necessarily indicate an exceedance because the high reading could have been caused by water vapor or another interference. The commenters believe EPA has not demonstrated that the tiny amount of data collected during the initial performance test would be representative of the opacity performance of ESP over the full range of foreseeable operating conditions. Thirty 6-minute averages taken over a 3-hour period will not adequately characterize the range of 87,600 6-minute averages generated over an entire year. Thus, EPA has not demonstrated that a limit set in this manner would be consistently achievable by well-operated and maintained equipment under the most adverse operating conditions over time.

Response. We believe that opacity is well established as a surrogate for PM. However, we understand the concerns of the commenters with respect to variability and have written the procedures in the final rule for determining the COMS operating limit to account for variability. The opacity operating limit is based on measurement of 6-minute averages during the performance test, and then calculating the 99 percent upper confidence limit on the mean of a normal distribution of the average opacity values. This statistical approach will account for normal variability and still provide assurance that the ESP is operating properly.

4. Operating Limits for Capture Systems

Comment. Nine commenters believe that an enforceable range of operating limits applicable under all operating conditions cannot be determined from the initial performance test for damper systems. Fixed damper positions for one set of operating conditions are not appropriate due to varying simultaneous operations, normal process variations, and seasonable variations. The final rule should allow sources to specify multiple operating scenarios or ranges of operation in the operation and maintenance plan and require plants to meet the values in the plan rather than those set in the initial performance test. Eight of these commenters also recommend that the final rule include an alternative allowing continuous monitoring of fan amperage, like the provisions included in the proposed standards for coke plants.

Response. We investigated this issue further, and based on the additional information we received, we agree that fixed damper settings are not practicable or desirable in many cases. For example, damper settings may need to be changed in the BOPF shop depending on the operations underway at the time, such as hot metal transfer, desulfurization, charging, oxygen blowing, and tapping. We have written the final rule to provide flexibility and have modeled it after the MACT standard for primary copper smelters. The owner or operator must specify in the operation and maintenance plan the damper settings that will be used under different operating scenarios and for seasonal variations. These damper settings must be checked once per day. We have also added fan amperage as an acceptable alternative, consistent with the MACT standards for coke ovens and for primary copper smelters.

E. How Did We Revise the Performance Test Requirements?

1. Overlapping Cycles

Comment. Some plants have the capability of overlapping cycles of two separate furnaces (*e.g.*, they may blow one furnace while another is being tapped). It appears that EPA's database is comprised of tests conducted on single furnaces. For this reason, seven commenters ask EPA to clarify that testing of primary emissions from BOPF is to be conducted during the steel production cycle of a single furnace. Other shop operations may be suspended during the testing. This approach is consistent with the manner in which the data were collected.

Response. We specify in the final rule exactly when owners or operators must test primary emissions from BOPF. For closed hood BOPF, plants must sample only during the primary oxygen blow. For open hood BOPF, plants must sample during the steel production cycle. We clarified that the steel production cycle begins when scrap is charged to the furnace and ends 3 minutes after the slag is emptied from the vessel. These requirements are

consistent with the way the emission test data were collected. We do not agree that testing should be performed under conditions that do not represent normal operations, such as suspending certain shop operations. The provisions in 40 CFR 63.7(e) apply and require that sampling be conducted under conditions that are based on representative performance (*i.e.*, performance based on normal operating conditions of the affected source).

2. Testing Multiple Stacks

Comment. Eight commenters believe it is impractical and burdensome to require simultaneous tests of multiple stacks or vents for a control device (*e.g.*, baghouse with eight modules, each with its own fan and stack). Successive testing of each stack or vent could be more manageable, but still has excessive costs. One commenter estimates 42 days of testing could be needed at one plant if each stack and vent must be tested. For these reasons, the proposed rule should be revised to allow for performance tests of a representative exhaust flow where control devices with multiple stacks are used.

Response. We agree and believe that because of the site-specific nature of this problem, decisions should be made on a case-by-case basis by the applicable permitting authority. We have written the final rule such that a source may conduct a representative sampling of stacks subject to the approval of the permitting authority when there are more than three stacks associated with a process.

F. How Did We Revise the Cost Estimates and Economic Impact Analysis?

Comment. Several commenters stated that we significantly underestimated the cost of the proposed rule. At proposal, we estimated a capital cost of $34 million. The commenters said that the total capital cost was in the range of $270 to $320 million. Their estimate includes the cost of controls for plants not included in EPA's estimate as well as higher estimates of the cost for controls and monitoring in general.

Response. Following proposal and the receipt of comments, we contacted facilities to discuss the details of their cost estimates. Some facilities provided the details and basis of their estimates, and we incorporated them into our revised estimates. Other plants did not provide details or documentation; consequently, we developed our best estimate of potential costs for these facilities. In addition, we collected opacity data for most of the operating plants. We used these data to identify plants that may need to install capture and control systems in the blast furnace casthouse or BOPF shop to meet the 20 percent opacity limit. Our revised capital cost estimate increased to $93 million.

Comment: Eight commenters urge EPA to update it's economic impact analysis to represent current economic conditions of the steel industry and the cumulative effect of all other pending environmental regulatory requirements facing the industry during the same time period.

Response: We agree with the commenters and have performed a revised economic impact analysis. The revised analysis attempts to account for the factors mentioned in the comment. At proposal, we estimated domestic production from integrated steel mills would decline by 3,100 tons, and operating profits were expected to decrease by $5.2 million annually. With our revised analysis, we estimate domestic production from integrated mills will decline by 73,000 tons, and operating profits will decrease by $13 million per year. A complete copy of the economic impact analysis is available in the docket.

IV. Summary of Environmental, Energy, and Economic Impacts

A. What Are the Air Emission Impacts?

The installation of new controls and upgrades will result in reductions in emissions of metal HAP and PM. We estimate that five new capture and control systems for the blast furnace casthouses will reduce these emissions by 90 percent, a reduction of 14 tpy of HAP and 2,100 tpy of PM. The new BOPF scrubbers at one plant and upgrades at two others will result in a 50 percent reduction in emissions, 5 tpy of HAP and 350 tpy of PM. Six new capture and control systems for fugitive emissions from BOPF shops will result in a 90 percent reduction in emissions, 48 tpy of HAP and 3,300 tpy of PM.

Most plants currently operate air pollution control equipment sufficient to meet the final rule requirements. We expect the standard to reduce metal HAP emissions from plants that will need to install or upgrade controls by 67 tpy and PM emissions by 5,800 tpy. Nationwide emissions of metal HAP and PM from integrated iron and steel plants will be reduced by nearly 20 percent from current levels.

B. What Are the Cost Impacts?

The nationwide capital and annual costs of new and upgraded capture and control systems are estimated at $93 million and $15 million/yr, respectively. The total nationwide annual costs (including monitoring and recordkeeping) are about $16 million/yr. These costs are based on a new primary control system (high-pressure drop venturi scrubbers) for one BOPF shop, upgraded primary controls at two others, six new capture and control systems for fugitive BOPF emissions, and five new capture and control systems for blast furnace casthouses. In addition, the estimate includes a capital cost of $0.9 million and a total annual cost of $1 million for monitoring, reporting, and recordkeeping.

C. What Are the Economic Impacts?

We conducted a detailed economic impact analysis to determine the impacts of the final rule on both the industry and the U.S. market for steel mill products. We estimate the economic impacts in both areas to be negligible. We project the price of steel mill products, in aggregate, to increase by less than 0.1 percent with domestic production from integrated mills declining by 73,100 short tons. This decline in production at affected integrated mills is somewhat offset by increases at nonintegrated domestic steel producers (15,800 short tons) and foreign imports (49,500 short tons). In terms of industry impacts, the integrated steel producers are projected to experience a slight decrease in operating profits of $13 million annually, which reflects increased costs of compliance and associated reductions in revenues from producing final steel mill products. In addition, we don't foresee any individual integrated facility being in jeopardy of closure as a result of implementing the rule.

Based on the market analysis, the annual costs to society of today's final rule are projected to be $15.4 million. As a result of slightly higher prices for steel mill products, the final consumers of these products will incur an additional $6.2 million annually. Profits at integrated steel mills are expected to decline by $13 million annually because of directly incurred control costs and reduced product revenues, while nonintegrated steel mills that compete in these markets and are unaffected by today's rule will experience an increase in profits of $2.2 million. Similarly, foreign steel producers will also experience an increase in profits of $1.7 million due to the slightly higher prices and increases in imports to the U.S. market. For more information, consult the economic impact analysis supporting the proposed rule.

Attachment 1
Attachment 1

D. What Are the Non-Air Health, Environmental, and Energy Impacts?

Implementation of the rule will result in a small increase in solid waste-3,200 tpy of sludge and 5,500 tpy of dust. The energy increase is estimated at 24,000 megawatt-hours per year, primarily due to the energy requirements of new venturi scrubbers.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is ''significant'' and, therefore, subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines a ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlement, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that the final rule is not a ''significant regulatory action'' under the terms of Executive Order 12866, and is, therefore, not subject to OMB review.

B. Paperwork Reduction Act

The information collection requirements in the final rule have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An information collection request (ICR) document has been prepared by EPA (ICR No. 2003.02), and a copy may be obtained from Susan Auby by mail at U.S. EPA, Office of Environmental Information, Collection Strategies Division (2822T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460, by e-mail at *auby.susan@epa.gov,* or by calling (202) 566–1672. A copy also may be downloaded off the Internet at *http://www.epa.gov/icr.* The information requirements are not enforceable until OMB approves them.

The information requirements are based on notification, recordkeeping, and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to NESHAP. These recordkeeping and reporting requirements are specifically authorized by section 112 of the CAA (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to Agency policies in 40 CFR part 2, subpart B.

The final rule requires applicable one-time notifications required by the General Provisions for each affected source. As required by the NESHAP General Provisions, all plants must prepare and operate by a startup, shutdown, and malfunction plan. Plants also are required to prepare an operation and maintenance plan for capture systems and control devices subject to operating limits. Records are required to demonstrate continuous compliance with the monitoring, operation, and maintenance requirements for capture systems, control devices, and monitoring systems. Semiannual compliance reports also are required. These reports must describe any deviation from the standards, any period a continuous monitoring system was out-of-control, or any startup, shutdown, or malfunction event where actions taken to respond were inconsistent with startup, shutdown, and malfunction plan. If no deviation or other event occurred, only a summary report is required. Consistent with the General Provisions, if actions taken in response to a startup, shutdown, or malfunction event are not consistent with the plan, an immediate report must be submitted within 2 days of the event with a letter report 7 days later.

The annual public reporting and recordkeeping burden for this collection of information averaged over the first 3 years after May 20, 2003 is estimated to total 4,772 labor hours per year at a total annual cost of $347,115, including labor, capital, and operation and maintenance. Total capital costs associated with the monitoring equipment is estimated at $885,000. The total annualized cost of the monitoring equipment is estimated at $126,000. This estimate includes the capital, operating, and maintenance costs associated with the installation and operation of the monitoring equipment.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purpose of collecting, validating, and verifying information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to respond to a collection of information; search existing data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

C. Regulatory Flexibility Act

The EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with the final rule. The EPA has also determined that the final rule will not have a significant economic impact on a substantial number of small entities. For purposes of assessing the impacts of today's final rule on small entities, small entity is defined as: (1) A small business according to the U.S. Small Business Administration (SBA) size standards for NAICS code 33111 (Iron and Steel Mills) of 1,000 or fewer employees; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. Based on the SBA size category for this source category, no small businesses are subject to the final rule and its requirements.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, the EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may

result in expenditures by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires the EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least-burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the EPA to adopt an alternative other than the least-costly, most cost-effective, or least-burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before the EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's final rule contains no Federal mandate (under the regulatory provisions of the UMRA) for State, local, or tribal governments. The EPA has determined that the final rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector of $100 million or more in any one year. Thus, the final rule is not subject to the requirements of sections 202 and 205 of the UMRA. The EPA has also determined that the final rule contains no regulatory requirements that might significantly or uniquely affect small governments. Thus, today's final rule is not subject to the requirements of section 203 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132 (64 FR 43255, August 10, 1999) requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

The final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. None of the affected facilities are owned or operated by State governments. Thus, Executive Order 13132 does not apply to the final rule.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175 (65 FR 67249, November 9, 2000) requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.''

The final rule does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes. No tribal governments own facilities subject to the NESHAP. Thus, Executive Order 13175 does not apply to the final rule.

G. Executive Order 13045: Protection of Children From Environmental Health & Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant,'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the EPA must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. The final rule is not subject to Executive Order 13045 because it is based on control technology and not on health or safety risks.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

The final rule is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (Pub. L. 104–113; 15 U.S.C. 272 note) directs the EPA to use voluntary consensus standards in their regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. The NTTAA directs EPA to provide Congress, through annual reports to OMB, with explanations when an agency does not use available and applicable voluntary consensus standards.

The final rule involves technical standards. Therefore, the EPA conducted a search to identify potentially applicable voluntary consensus standards. However, we identified no such standards as alternatives to EPA Methods 2F, 2G, 5D, 9 and OSW 846 Method 9071B, and none were brought to our attention in comments.

The Agency identified ASTM D4536–96, ''Test Method for High Volume Sampling for Solid Particulate Matter and Determination of Particle Emissions,'' as being potentially applicable and proposed it as an alternative to Method 5 or 17 for testing positive pressure fabric filters. However, this standard has been replaced by ASTM D6331–98, ''Standard Test Method for Determination of Mass Concentration of Particulate Matter from Stationary Sources at Low Concentrations (Manual Gravimetric Method).'' We have decided not to use ASTM D6331 in the final rule. The use of this voluntary consensus standard would be impractical or inconsistent with applicable law because it is not similar enough to replace ASTM D4536–96.

The search for emissions measurement procedures identified 16 other voluntary consensus standards. The EPA has not adopted these standards as alternatives in the final rule because they are impractical or still under development. Our search and review results are available in the docket.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing the final rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the final rule in the **Federal Register**. The final rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: February 28, 2003.

Christine Todd Whitman,

Administrator.

■ For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is amended as follows:

PART 63—[AMENDED]

■ 1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, *et seq.*

Subpart A—[Amended]

■ 2. Section 63.14 is amended by adding a new paragraph (k) to read as follows:

§ 63.14 Incorporation by reference.

* * * * *

(k) The following material may be obtained from U.S. EPA, Office of Solid Waste (5305W), 1200 Pennsylvania Avenue, NW., Washington, DC 20460:

(1) Method 9071B, ''n-Hexane Extractable Material(HEM) for Sludge, Sediment, and Solid Samples,'' (Revision 2, April 1998) as published in EPA Publication SW–846: ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.'' The incorporation by reference of Method 9071B is approved for Section 63.7824(e) of Subpart FFFFF of this part.

■ 3. Part 63 is amended by adding subpart FFFFF to read as follows:

Subpart FFFFF—National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities

Sec.

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Subpart FFFFF—National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities

What This Subpart Covers

§ 63.7780 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for integrated iron and steel manufacturing facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with all applicable emission limitations and operation and maintenance requirements in this subpart.

§ 63.7781 Am I subject to this subpart?

You are subject to this subpart if you own or operate an integrated iron and steel manufacturing facility that is (or is part of) a major source of hazardous air pollutants (HAP) emissions. Your integrated iron and steel manufacturing facility is a major source of HAP if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year.

§ 63.7782 What parts of my plant does this subpart cover?

(a) This subpart applies to each new and existing affected source at your integrated iron and steel manufacturing facility.

(b) The affected sources are each new or existing sinter plant, blast furnace, and basic oxygen process furnace (BOPF) shop at your integrated iron and steel manufacturing facility.

(c) This subpart covers emissions from the sinter plant windbox exhaust, discharge end, and sinter cooler; the blast furnace casthouse; and the BOPF shop including each individual BOPF and shop ancillary operations (hot metal transfer, hot metal desulfurization, slag skimming, and ladle metallurgy).

(d) A sinter plant, blast furnace, or BOPF shop at your integrated iron and steel manufacturing facility is existing if you commenced construction or reconstruction of the affected source before July 13, 2001.

(e) A sinter plant, blast furnace, or BOPF shop at your integrated iron and steel manufacturing facility is new if you commence construction or reconstruction of the affected source on or after July 13, 2001. An affected source is reconstructed if it meets the definition of reconstruction in § 63.2.

§ 63.7783 When do I have to comply with this subpart?

(a) If you have an existing affected source, you must comply with each emission limitation and operation and maintenance requirement in this subpart that applies to you no later than May 22, 2006.

(b) If you have a new affected source and its initial startup date is on or before May 20, 2003, then you must comply with each emission limitation and operation and maintenance requirement in this subpart that applies to you by May 20, 2003.

(c) If you have a new affected source and its initial startup date is after May 20, 2003, you must comply with each emission limitation and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(d) If your integrated iron and steel manufacturing facility is not a major source and becomes a major source of HAP, the following compliance dates apply to you.

(1) Any portion of the existing integrated iron and steel manufacturing facility that becomes a new affected source or a new reconstructed source must be in compliance with this subpart upon startup.

(2) All other parts of the integrated iron and steel manufacturing facility must be in compliance with this subpart no later than 2 years after it becomes a major source.

(e) You must meet the notification and schedule requirements in § 63.7840. Several of these notifications must be submitted before the compliance date for your affected source.

Emission Limitations

§ 63.7790 What emission limitations must I meet?

(a) You must meet each emission limit and opacity limit in Table 1 to this subpart that applies to you.

(b) You must meet each operating limit for capture systems and control devices in paragraphs (b)(1) through (3) of this section that applies to you.

(1) You must operate each capture system applied to emissions from a sinter plant discharge end or blast furnace casthouse or to secondary emissions from a BOPF at or above the lowest value or settings established for the operating limits in your operation and maintenance plan;

(2) For each venturi scrubber applied to meet any particulate emission limit in Table 1 to this subpart, you must maintain the hourly average pressure drop and scrubber water flow rate at or above the minimum levels established during the initial performance test.

(3) For each electrostatic precipitator applied to emissions from a BOPF, you must maintain the average opacity of emissions for each 6-minute period at or below the site-specific opacity value corresponding to the 99 percent upper confidence limit on the mean of a normal distribution of average opacity values established during the initial performance test.

(c) An owner or operator who uses an air pollution control device other than a baghouse, venturi scrubber, or electrostatic precipitator must submit a description of the device; test results collected in accordance with § 63.7822 verifying the performance of the device for reducing emissions of particulate matter to the atmosphere to the levels required by this subpart; a copy of the operation and maintenance plan required in § 63.7800(b); and appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emission limitation(s). The monitoring plan identifying the operating parameters to be monitored is subject to approval by the Administrator.

(d) For each sinter plant, you must either:

(1) Maintain the 30-day rolling average oil content of the feedstock at or below 0.02 percent; or

(2) Maintain the 30-day rolling average of volatile organic compound emissions from the windbox exhaust stream at or below 0.2 lb/ton of sinter.

Operation and Maintenance Requirements

§ 63.7800 What are my operation and maintenance requirements?

(a) As required by § 63.6(e)(1)(i), you must always operate and maintain your affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture system or control device subject to an operating limit in § 63.7790(b). Each plan must address the elements in paragraphs (b)(1) through (5) of this section.

(1) Monthly inspections of the equipment that is important to the performance of the total capture system (*e.g.*, pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (*e.g.*, presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan also must include requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.

(2) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(3) Operating limits for each capture system applied to emissions from a sinter plant discharge end or blast furnace casthouse, or to secondary emissions from a BOPF. You must establish the operating limits according to the requirements in paragraphs (b)(3)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and the damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to, volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure.

(ii) For each operating limit parameter selected in paragraph (b)(3)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate.

(iii) Include documentation in your plan to support your selection of the operating limits established for the capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of § 63.7830(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(4) Corrective action procedures for bag leak detection systems. In the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repair the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions; and

(5) Procedures for determining and recording the daily sinter plant production rate in tons per hour.

General Compliance Requirements

§ 63.7810 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, and malfunction as defined in § 63.2.

(b) During the period between the compliance date specified for your affected source in § 63.7783 and the date upon which continuous monitoring systems have been installed and certified and any applicable operating limits have been set, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop and implement a written startup, shutdown, and malfunction plan according to the provisions in § 63.6(e)(3).

Initial Compliance Requirements

§ 63.7820 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) You must conduct a performance test to demonstrate initial compliance with each emission and opacity limit in Table 1 to this subpart that applies to you. You must also conduct a performance test to demonstrate initial compliance with the 30-day rolling average operating limit for the oil content of the sinter plant feedstock in § 63.7790(d)(1) or alternative limit for volatile organic compound emissions from the sinter plant windbox exhaust stream in § 63.7790(d)(2). You must conduct the performance tests within 180 calendar days after the compliance date that is specified in § 63.7783 for your affected source and report the results in your notification of compliance status.

(b) For each operation and maintenance requirement that applies to you where initial compliance is not demonstrated using a performance test or opacity observation, you must demonstrate initial compliance within 30 calendar days after the compliance date that is specified for your affected source in § 63.7783.

(c) If you commenced construction or reconstruction between July 13, 2001 and May 20, 2003, you must demonstrate initial compliance with either the proposed emission limit or the promulgated emission limit no later than November 17, 2003 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between July 13, 2001 and May 20, 2003, and you chose to comply with the proposed emission limit when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limit by November 17, 2006, or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

§ 63.7821 When must I conduct subsequent performance tests?

You must conduct subsequent performance tests to demonstrate compliance with all applicable PM and opacity limits in Table 1 to this subpart no less frequently than twice (at mid-term and renewal) during each term of your title V operating permit. For sources without a title V operating permit, you must conduct subsequent performance tests every 2.5 years.

§ 63.7822 What test methods and other procedures must I use to demonstrate initial compliance with the emission limits for particulate matter?

(a) You must conduct each performance test that applies to your affected source according to the requirements in § 63.7(e)(1) and the conditions detailed in paragraphs (b) through (i) of this section.

(b) To determine compliance with the applicable emission limit for particulate matter in Table 1 to this subpart, follow the test methods and procedures in paragraphs (b)(1) and (2) of this section.

(1) Determine the concentration of particulate matter according to the following test methods in appendix A to part 60 of this chapter:

(i) Method 1 to select sampling port locations and the number of traverse points. Sampling ports must be located at the outlet of the control device and prior to any releases to the atmosphere.

(ii) Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5D, or 17, as applicable, to determine the concentration of particulate matter (front half filterable catch only).

(2) Collect a minimum sample volume of 60 dry standard cubic feet (dscf) of gas during each particulate matter test run. Three valid test runs are needed to comprise a performance test.

(c) For each sinter plant windbox exhaust stream, you must complete the requirements of paragraphs (c)(1) and (2) of this section:

(1) Follow the procedures in your operation and maintenance plan for measuring and recording the sinter production rate for each test run in tons per hour; and

(2) Compute the process-weighted mass emissions (E_p) for each test run using Equation 1 of this section as follows:

$$E_p = \frac{C \times Q}{P \times K} \qquad \text{(Eq. 1)}$$

Where:

E_p = Process-weighted mass emissions of particulate matter, lb/ton;

C = Concentration of particulate matter, grains per dry standard cubic foot (gr/dscf);

Q = Volumetric flow rate of stack gas, dry standard cubic foot per hour (dscf/hr);

P = Production rate of sinter during the test run, tons/hr; and

K = Conversion factor, 7,000 grains per pound (gr/lb).

(d) If you apply two or more control devices in parallel to emissions from a sinter plant discharge end or a BOPF, compute the average flow-weighted concentration for each test run using Equation 2 of this section as follows:

$$C_W = \frac{\sum_{i=1}^{n} C_i Q_i}{\sum_{i=1}^{n} Q_i} \qquad \text{(Eq. 2)}$$

Where:

C_w = Flow-weighted concentration, gr/dscf;

C_i = Concentration of particulate matter from exhaust stream ''i'', gr/dscf; and

Q_i = Volumetric flow rate of effluent gas from exhaust stream ''i'', dry standard cubic foot per minute (dscfm).

(e) For a control device applied to emissions from a blast furnace casthouse, sample for an integral number of furnace tapping operations sufficient to obtain at least 1 hour of sampling for each test run.

(f) For a primary emission control device applied to emissions from a BOPF with a closed hood system, sample only during the primary oxygen blow and do not sample during any subsequent reblows. Continue sampling for each run for an integral number of primary oxygen blows.

(g) For a primary emission control system applied to emissions from a BOPF with an open hood system and for a control device applied solely to secondary emissions from a BOPF, you must complete the requirements of paragraphs (g)(1) and (2) of this section:

(1) Sample only during the steel production cycle. Conduct sampling under conditions that are representative of normal operation. Record the start and end time of each steel production cycle and each period of abnormal operation; and

(2) Sample for an integral number of steel production cycles. The steel production cycle begins when the scrap is charged to the furnace and ends 3 minutes after the slag is emptied from the vessel into the slag pot.

(h) For a control device applied to emissions from BOPF shop ancillary operations (hot metal transfer, skimming, desulfurization, or ladle metallurgy), sample only when the operation(s) is being conducted.

(i) Subject to approval by the permitting authority, you may conduct representative sampling of stacks when there are more than three stacks associated with a process.

§ 63.7823 What test methods and other procedures must I use to demonstrate initial compliance with the opacity limits?

(a) You must conduct each performance test that applies to your affected source according to the requirements in § 63.7(h)(5) and the conditions detailed in paragraphs (b) through (d) of this section.

(b) You must conduct each visible emissions performance test such that the opacity observations overlap with the performance test for particulate matter.

(c) To determine compliance with the applicable opacity limit in Table 1 to this subpart for a sinter plant discharge end or a blast furnace casthouse:

(1) Using a certified observer, determine the opacity of emissions according to Method 9 in appendix A to part 60 of this chapter.

(2) Obtain a minimum of 30 6-minute block averages. For a blast furnace casthouse, make observations during tapping of the furnace. Tapping begins when the furnace is opened, usually by creating a hole near the bottom of the furnace, and ends when the hole is plugged.

(d) To determine compliance with the applicable opacity limit in Table 1 to this subpart for BOPF shops:

(1) For an existing BOPF shop:

(i) Using a certified observer, determine the opacity of emissions according to Method 9 in appendix A to part 60 of this chapter except as specified in paragraphs (d)(1)(ii) and (iii) of this section.

(ii) Instead of procedures in section 2.4 of Method 9 in appendix A to part 60 of this chapter, record observations to the nearest 5 percent at 15-second intervals for at least three steel production cycles.

(iii) Instead of procedures in section 2.5 of Method 9 in appendix A to part 60 of this chapter, determine the 3-minute block average opacity from the average of 12 consecutive observations recorded at 15-second intervals.

(2) For a new BOPF shop housing a bottom-blown BOPF:

(i) Using a certified observer, determine the opacity of emissions according to Method 9 in appendix A to part 60 of this chapter.

(ii) Determine the highest and second highest sets of 6-minute block average opacities for each steel production cycle.

(3) For a new BOPF shop housing a top-blown BOPF:

(i) Determine the opacity of emissions according to the requirements for an existing BOPF shop in paragraphs (d)(1)(i) through (iii) of this section.

(ii) Determine the highest and second highest sets of 3-minute block average opacities for each steel production cycle.

(4) Opacity observations must cover the entire steel production cycle and must be made for at least three cycles. The steel production cycle begins when the scrap is charged to the furnace and ends 3 minutes after the slag is emptied from the vessel into the slag pot.

(5) Determine and record the starting and stopping times of the steel production cycle.

§ 63.7824 What test methods and other procedures must I use to establish and demonstrate initial compliance with operating limits?

(a) For each capture system subject to an operating limit in § 63.7790(b)(1), you must certify that the system operated during the performance test at the site-specific operating limits established in your operation and maintenance plan using the procedures in paragraphs (a)(1) through (4) of this section.

(1) Concurrent with all opacity observations, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements specified in § 63.7830(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each opacity observation period segment.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(4) Certify in your performance test report that during all observation period segments, the capture system was operating at the values or settings established in your capture system operation and maintenance plan.

(b) For a venturi scrubber subject to operating limits for pressure drop and scrubber water flow rate in

§ 63.7790(b)(2), you must establish site-specific operating limits according to the procedures in paragraphs (b)(1) and (2) of this section.

(1) Using the continuous parameter monitoring system (CPMS) required in § 63.7830(c), measure and record the pressure drop and scrubber water flow rate during each run of the particulate matter performance test.

(2) Compute and record the hourly average pressure drop and scrubber water flow rate for each individual test run. Your operating limits are the lowest average pressure drop and scrubber water flow rate value in any of the three runs that meet the applicable emission limit.

(c) For an electrostatic precipitator subject to the operating limit in § 63.7790(b)(3) for opacity, you must establish a site-specific operating limit according to the procedures in paragraphs (c)(1) through (3) of this section.

(1) Using the continuous opacity monitoring system (COMS) required in § 63.7830(d), measure and record the opacity of emissions from each control device stack during each run of the particulate matter performance test.

(2) Compute and record the 6-minute block average opacity from 36 or more data points equally spaced over each 6-minute period during the test runs.

(3) Determine, based on the 6-minute block averages, the opacity value corresponding to the 99 percent upper confidence limit on the mean of a normal distribution of average opacity values.

(d) You may change the operating limits for a capture system, venturi scrubber, or electrostatic precipitator if you meet the requirements in paragraphs (d)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emission limitation in Table 1 to this subpart.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (c) of this section for a control device or capture system.

(e) For each sinter plant subject to the operating limit for the oil content of the sinter plant feedstock in § 63.7790(d)(1), you must demonstrate initial compliance according to the procedures in paragraphs (e)(1) through (3) of this section.

(1) Sample the feedstock at least three times a day (once every 8 hours), composite the three samples each day, and analyze the composited samples using Method 9071B, ''n-Hexane Extractable Material(HEM) for Sludge, Sediment, and Solid Samples,'' (Revision 2, April 1998). Method 9071B is incorporated by reference (see § 63.14) and is published in EPA Publication SW–846 ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.'' Record the sampling date and time, oil content values, and sinter produced (tons/day).

(2) Continue the sampling and analysis procedure for 30 consecutive days.

(3) Each day, compute and record the 30-day rolling average using that day's value and the 29 previous daily values.

(f) To demonstrate initial compliance with the alternative operating limit for volatile organic compound emissions from the sinter plant windbox exhaust stream in § 63.7790(d)(2), follow the test methods and procedures in paragraphs (f)(1) through (5) of this section.

(1) Determine the volatile organic compound emissions according to the following test methods in appendix A to part 60 of this chapter:

(i) Method 1 to select sampling port locations and the number of traverse points. Sampling ports must be located at the outlet of the control device and prior to any releases to the atmosphere.

(ii) Method 2, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 25 to determine the mass concentration of volatile organic compound emissions (total gaseous nonmethane organics as carbon) from the sinter plant windbox exhaust stream stack.

(2) Determine volatile organic compound (VOC) emissions every 24 hours (from at least three samples taken at 8-hour intervals) using Method 25 in 40 CFR part 60, appendix A. Record the sampling date and time, sampling results, and sinter produced (tons/day).

(3) Compute the process-weighted mass emissions (E_v) each day using Equation 1 of this section as follows:

$$E_v = \frac{M_C \times Q}{35.31 \times 454{,}000 \times K} \qquad \text{(Eq. 1)}$$

Where:

E_v = Process-weighted mass emissions of volatile organic compounds, lb/ton;

M_c = Average concentration of total gaseous nonmethane organics as carbon by Method 25 (40 CFR part 60, appendix A), milligrams per dry standard cubic meters (mg/dscm) for each day;

Q = Volumetric flow rate of stack gas, dscf/hr;

35.31 = Conversion factor (dscf/dscm);

454,000 = Conversion factor (mg/lb); and

K = Daily production rate of sinter, tons/hr.

(4) Continue the sampling and analysis procedure in paragraphs (f)(1) through (3) of this section for 30 consecutive days.

(5) Compute and record the 30-day rolling average of VOC emissions for each operating day.

(g) You may use an alternative test method to determine the oil content of the sinter plant feedstock or the volatile organic compound emissions from the sinter plant windbox exhaust stack if you have already demonstrated the equivalency of the alternative method for a specific plant and have received previous approval from the applicable permitting authority.

§ 63.7825 How do I demonstrate initial compliance with the emission limitations that apply to me?

(a) For each affected source subject to an emission or opacity limit in Table 1 to this subpart, you have demonstrated initial compliance if:

(1) You meet the conditions in Table 2 to this subpart; and

(2) For each capture system subject to the operating limit in § 63.7790(b)(1), you have established appropriate site-specific operating limit(s) and have a record of the operating parameter data measured during the performance test in accordance with § 63.7824(a)(1).

(3) For each venturi scrubber subject to the operating limits for pressure drop and scrubber water flow rate in § 63.7790(b)(2), you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with § 63.7824(b); and

(4) For each electrostatic precipitator subject to the opacity operating limit in § 63.7790(b)(3), you have established an appropriate site-specific operating limit and have a record of the opacity measurements made during the performance test in accordance with § 63.7824(c).

(b) For each existing or new sinter plant subject to the operating limit in § 63.7790(d)(1), you have demonstrated initial compliance if the 30-day rolling average of the oil content of the feedstock, measured during the initial performance test in accordance with § 63.7824(e) is no more than 0.02

Attachment 1
Attachment 1

percent or the volatile organic compound emissions from the sinter plant windbox exhaust stream, measured during the initial performance test in accordance with § 63.7824(f), is no more than 0.2 lb/ton of sinter produced.

(c) For each emission limitation that applies to you, you must submit a notification of compliance status according to § 63.7840(e).

§ 63.7826 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?

(a) For a capture system applied to emissions from a sinter plant discharge end or blast furnace casthouse or to secondary emissions from a BOPF, you have demonstrated initial compliance if you meet all of the conditions in paragraphs (a)(1) through (4) of this section.

(1) Prepared the capture system operation and maintenance plan according to the requirements of § 63.7800(b), including monthly inspection procedures and detailed descriptions of the operating parameter(s) selected to monitor the capture system;

(2) Certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan;

(3) Submitted a notification of compliance status according to the requirements in § 63.7840(e), including a copy of the capture system operation and maintenance plan and your certification that you will operate the capture system at the values or settings established for the operating limits in that plan; and

(4) Prepared a site-specific monitoring plan according to the requirements in § 63.7831(a).

(b) For each control device subject to operating limits in § 63.7790(b)(2) or (3), you have demonstrated initial compliance if you meet all the conditions in paragraphs (b)(1) through (3) of this section.

(1) Prepared the control device operation and maintenance plan according to the requirements of § 63.7800(b), including a preventative maintenance schedule and, if applicable, detailed descriptions of the procedures you use for corrective action for baghouses;

(2) Submitted a notification of compliance status according to the requirements in § 63.7840(e), including a copy of the operation and maintenance plan; and

(3) Prepared a site-specific monitoring plan according to the requirements in § 63.7831(a).

Continuous Compliance Requirements

§ 63.7830 What are my monitoring requirements?

(a) For each capture system subject to an operating limit in § 63.7790(b)(1) established in your capture system operation and maintenance plan, you must install, operate, and maintain a CPMS according to the requirements in § 63.7831(e) and the requirements in paragraphs (a)(1) through (3) of this section.

(1) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(2) If you use a flow measurement device to monitor the operating limit parameter for a sinter plant discharge end or blast furnace casthouse, you must monitor the hourly average rate (*e.g.*, the hourly average actual volumetric flow rate through each separately ducted hood, the average hourly total volumetric flow rate at the inlet to the control device) according to the requirements in § 63.7832.

(3) If you use a flow measurement device to monitor the operating limit parameter for a capture system applied to secondary emissions from a BOPF, you must monitor the average rate for each steel production cycle (*e.g.*, the average actual volumetric flow rate through each separately ducted hood for each steel production cycle, the average total volumetric flow rate at the inlet to the control device for each steel production cycle) according to the requirements in § 63.7832.

(b) For each baghouse applied to meet any particulate emission limit in Table 1 of this subpart, you must install, operate, and maintain a bag leak detection system according to § 63.7831(f), monitor the relative change in particulate matter loadings according to the requirements in § 63.7832, and conduct inspections at their specified frequencies according to the requirements in paragraphs (b)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.

(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(c) For each venturi scrubber subject to the operating limits for pressure drop and scrubber water flow rate in § 63.7790(b)(2), you must install, operate, and maintain CPMS according to the requirements in § 63.7831(g) and monitor the hourly average pressure drop and water flow rate according to the requirements in § 63.7832.

(d) For each electrostatic precipitator subject to the opacity operating limit in § 63.7790(b)(3), you must install, operate, and maintain a COMS according to the requirements in § 63.7831(h) and monitor the 6-minute average opacity of emissions exiting each control device stack according to the requirements in § 63.7832.

(e) For each sinter plant subject to the operating limit in § 63.7790(d), you must either:

(1) Compute and record the 30-day rolling average of the oil content of the feedstock for each operating day using the procedures in § 63.7824(e); or

(2) Compute and record the 30-day rolling average of volatile organic compound emissions (lbs/ton of sinter) for each operating day using the procedures in § 63.7824(f).

§ 63.7831 What are the installation, operation, and maintenance requirements for my monitors?

(a) For each CPMS required in § 63.7830, you must develop and make available for inspection upon request by the permitting authority a site-specific monitoring plan that addresses the requirements in paragraphs (a)(1) through (6) of this section.

(1) Installation of the CPMS sampling probe or other interface at a

measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (*e.g.*, on or downstream of the last control device);

(2) Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system;

(3) Performance evaluation procedures and acceptance criteria (*e.g.*, calibrations);

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of §§ 63.8(c)(1), (c)(3), (c)(4)(ii), (c)(7), and (c)(8);

(5) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and

(6) Ongoing recordkeeping and reporting procedures in accordance the general requirements of §§ 63.10(c), (e)(1), and (e)(2)(i).

(b) Unless otherwise specified, each CPMS must:

(1) Complete a minimum of one cycle of operation for each successive 15-minute period and collect a minimum of three of the required four data points to constitute a valid hour of data;

(2) Provide valid hourly data for at least 95 percent of every averaging period; and

(3) Determine and record the hourly average of all recorded readings.

(c) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(d) You must operate and maintain the CPMS in continuous operation according to the site-specific monitoring plan.

(e) For each capture system subject to an operating limit in § 63.7790(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a) through (d) of this section.

(f) For each baghouse applied to meet any particulate emission limit in Table 1 of this subpart, you must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (f)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The system must provide output of relative changes in particulate matter loadings.

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel.

(4) Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, ''Fabric Filter Bag Leak Detection Guidance,'' EPA–454/R–98–015, September 1997. You may install, operate, and maintain other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations.

(5) To make the initial adjustment of the system, establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, establish the alarm set points and the alarm delay time.

(6) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in your operation and maintenance plan. Do not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition.

(7) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(g) For each venturi scrubber subject to operating limits in § 63.7790(b)(2) for pressure drop and scrubber water flow rate, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a) through (d) of this section.

(h) For each electrostatic precipitator subject to the opacity operating limit in § 63.7790(b)(3), you must install, operate, and maintain each COMS according to the requirements in paragraphs (h)(1) through (4) of this section.

(1) You must install, operate, and maintain each COMS according to Performance Specification 1 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each COMS according to § 63.8 and Performance Specification 1 in appendix B to 40 CFR part 60.

(3) Each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(4) COMS data must be reduced as specified in § 63.8(g)(2).

§ 63.7832 How do I monitor and collect data to demonstrate continuous compliance?

(a) Except for monitoring malfunctions, out-of-control periods as specified in § 63.8(c)(7), associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) at all times an affected source is operating.

(b) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

§ 63.7833 How do I demonstrate continuous compliance with the emission limitations that apply to me?

(a) You must demonstrate continuous compliance for each affected source subject to an emission or opacity limit in § 63.7790(a) by meeting the requirements in Table 3 to this subpart.

(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in § 63.7790(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operate the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitor the capture system according to the requirements in § 63.7830(a) and collect, reduce, and record the monitoring data for each of the operating limit parameters according to the applicable requirements of this subpart;

(c) For each baghouse applied to meet any particulate emission limit in Table 1 to this subpart, you must demonstrate continuous compliance by completing the requirements in paragraphs (c)(1) and (2) of this section:

(1) Maintaining records of the time you initiated corrective action in the event of a bag leak detection system alarm, the corrective action(s) taken, and the date on which corrective action was completed.

(2) Inspecting and maintaining each baghouse according to the requirements in § 63.7831(f) and recording all information needed to document conformance with these requirements. If you increase or decrease the sensitivity of the bag leak detection system beyond the limits specified in § 63.7831(f)(6), you must include a copy of the required written certification by a responsible official in the next semiannual compliance report.

(d) For each venturi scrubber subject to the operating limits for pressure drop and scrubber water flow rate in § 63.7790(b)(2), you must demonstrate continuous compliance by completing the requirements of paragraphs (d)(1) through (3) of this section:

(1) Maintaining the hourly average pressure drop and scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Operating and maintaining each venturi scrubber CPMS according to § 63.7831(g) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to § 63.7831(b) and recording all information needed to document conformance with these requirements.

(e) For each electrostatic precipitator subject to the site-specific opacity operating limit in § 63.7790(b)(3), you must demonstrate continuous compliance by completing the requirements of paragraphs (e)(1) and (2) of this section:

(1) Maintaining the average opacity of emissions for each 6-minute period no higher than the site-specific limit established during the initial or subsequent performance test; and

(2) Operating and maintaining each COMS and reducing the COMS data according to § 63.7831(h).

(f) For each new or existing sinter plant subject to the operating limit in § 63.7790(d), you must demonstrate continuous compliance by either:

(1) For the sinter plant feedstock oil content operating limit in § 63.7790(d)(1),

(i) Computing and recording the 30-day rolling average of the percent oil content for each operating day according to the performance test procedures in § 63.7824(e);

(ii) Recording the sampling date and time, oil content values, and sinter produced (tons/day); and

(iii) Maintaining the 30-day rolling average oil content of the feedstock no higher than 0.02 percent.

(2) For the volatile organic compound operating limit in § 63.7790(d)(2),

(i) Computing and recording the 30-day rolling average of volatile organic compound emissions for each operating day according to the performance test procedures in § 63.7824(f);

(ii) Recording the sampling date and time, sampling values, and sinter produced (tons/day); and

(iii) Maintaining the 30-day rolling average of volatile organic compound emissions no higher than 0.2 lb/ton of sinter produced.

§ 63.7834 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system and control device subject to an operating limit in § 63.7790(b), you must demonstrate continuous compliance with the operation and maintenance requirements in § 63.7800(b) by meeting the requirements of paragraphs (a)(1) through (3) of this section:

(1) Making monthly inspections of capture systems and initiating corrective action according to § 63.7800(b)(1) and recording all information needed to document conformance with these requirements;

(2) Performing preventative maintenance according to § 63.7800(b)(2) and recording all information needed to document conformance with these requirements; and

(3) Initiating and completing corrective action for a bag leak detection system alarm according to § 63.7800(b)(4) and recording all information needed to document conformance with these requirements.

(b) You must maintain a current copy of the operation and maintenance plan required in § 63.7800(b) onsite and available for inspection upon request. You must keep the plans for the life of the affected source or until the affected source is no longer subject to the requirements of this subpart.

§ 63.7835 What other requirements must I meet to demonstrate continuous compliance?

(a) *Deviations.* You must report each instance in which you did not meet each emission limitation in § 63.7790 that applies to you. This includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each operation and maintenance requirement in § 63.7800 that applies to you. These instances are deviations from the emission limitations and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements in § 63.7841.

(b) *Startups, shutdowns, and malfunctions.* During periods of startup, shutdown, and malfunction, you must operate in accordance with your startup, shutdown, and malfunction plan.

(1) Consistent with §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the startup, shutdown, and malfunction plan.

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in § 63.6(e).

Notifications, Reports, and Records

§ 63.7840 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.6(h)(4) and (5), 63.7(b) and (c), 63.8(e) and (f)(4), and 63.9(b) through (h) that apply to you by the specified dates.

(b) As specified in § 63.9(b)(2), if you startup your affected source before May 20, 2003, you must submit your initial notification no later than September 17, 2003.

(c) As specified in § 63.9(b)(3), if you start your new affected source on or after May 20, 2003, you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(e) If you are required to conduct a performance test, opacity observation, or other initial compliance demonstration, you must submit a notification of compliance status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

(2) For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to § 63.10(d)(2).

§ 63.7841 What reports must I submit and when?

(a) *Compliance report due dates.* Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements in paragraphs (a)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.7783 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your source in § 63.7783.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (a)(1) through (4) of this section.

(b) *Compliance report contents.* Each compliance report must include the information in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took actions consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in § 63.10(d)(5)(i).

(5) If there were no deviations from the continuous compliance requirements in §§ 63.7833 and 63.7834 that apply to you, a statement that there were no deviations from the emission limitations or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS, COMS, or continuous emission monitoring system (CEMS) was out-of-control as specified in § 63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emission limitation in § 63.7790 that occurs at an affected source where you are not using a continuous monitoring system (including a CPMS, COMS, or CEMS) to comply with an emission limitation in this subpart, the compliance report must contain the information in paragraphs (b)(1) through (4) of this section and the information in paragraphs (b)(7)(i) and (ii) of this section. This includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each affected source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause, if applicable) as applicable and the corrective action taken.

(8) For each deviation from an emission limitation occurring at an affected source where you are using a continuous monitoring system (including a CPMS or COMS) to comply with the emission limitation in this subpart, you must include the information in paragraphs (b)(1) through (4) of this section and the information in paragraphs (b)(8)(i) through (xi) of this section. This includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control as specified in § 63.8(c)(7), including the information in § 63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period including those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.

(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) *Immediate startup, shutdown, and malfunction report.* If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan, you must submit an immediate startup, shutdown, and malfunction report according to the requirements in § 63.10(d)(5)(ii).

(d) *Part 70 monitoring report.* If you have obtained a title V operating permit for an affected source pursuant to 40 CFR part 70 or 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report for an affected source along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all the required information concerning deviations from any emission limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an affected source to your permitting authority.

§ 63.7842 What records must I keep?

(a) You must keep the following records:

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of

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compliance status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) The records in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests, performance evaluations, and opacity observations as required in § 63.10(b)(2)(viii).

(b) For each COMS, you must keep the records specified in paragraphs (b)(1) through (4) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Monitoring data for a performance evaluation as required in § 63.6(h)(7)(i) and (ii).

(3) Previous (that is, superceded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required in § 63.6(h)(6) for visual observations.

(d) You must keep the records required in §§ 63.7833 and 63.7834 to show continuous compliance with each emission limitation and operation and maintenance requirement that applies to you.

§ 63.7843 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to § 63.10(b)(1). You can keep the records offsite for the remaining 3 years.

Other Requirements and Information

§ 63.7850 What parts of the General Provisions apply to me?

Table 4 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.7851 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the United States Environmental Protection Agency (U.S. EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternative opacity emission limits in Table 1 to this subpart under § 63.6(h)(9).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90, except for approval of an alternative method for the oil content of the sinter plant feedstock or volatile organic compound measurements for the sinter plant windbox exhaust stream stack as provided in § 63.7824(g).

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

§ 63.7852 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, and in this section as follows.

Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on tribroelectric, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Basic oxygen process furnace means any refractory-lined vessel in which high-purity oxygen is blown under pressure through a bath of molten iron, scrap metal, and fluxes to produce steel. This definition includes both top and bottom blown furnaces, but does not include argon oxygen decarburization furnaces.

Basic oxygen process furnace shop means the place where steelmaking operations that begin with the transfer of molten iron (hot metal) from the torpedo car and end prior to casting the molten steel, including hot metal transfer, desulfurization, slag skimming, refining in a basic oxygen process furnace, and ladle metallurgy occur.

Basic oxygen process furnace shop ancillary operations means the processes where hot metal transfer, hot metal desulfurization, slag skimming, and ladle metallurgy occur.

Blast furnace means a furnace used for the production of molten iron from iron ore and other iron bearing materials.

Bottom-blown furnace means any basic oxygen process furnace in which oxygen and other combustion gases are introduced into the bath of molten iron through tuyeres in the bottom of the vessel or through tuyeres in the bottom and sides of the vessel.

Casthouse means the building or structure that encloses the bottom portion of a blast furnace where the hot metal and slag are tapped from the furnace.

Certified observer means a visible emission observer certified to perform EPA Method 9 opacity observations.

Desulfurization means the process in which reagents such as magnesium, soda ash, and lime are injected into the hot metal, usually with dry air or nitrogen, to remove sulfur.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation (including operating limits) or operation and maintenance requirement;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

Discharge end means the place where those operations conducted within the sinter plant starting at the discharge of the sintering machine's traveling grate including (but not limited to) hot sinter crushing, screening, and transfer operations occur.

Emission limitation means any emission limit, opacity limit, or operating limit.

Hot metal transfer station means the location in a basic oxygen process furnace shop where molten iron (hot

metal) is transferred from a torpedo car or hot metal car used to transport hot metal from the blast furnace casthouse to a holding vessel or ladle in the basic oxygen process furnace shop. This location also is known as the reladling station or ladle transfer station.

Integrated iron and steel manufacturing facility means an establishment engaged in the production of steel from iron ore.

Ladle metallurgy means a secondary steelmaking process that is performed typically in a ladle after initial refining in a basic oxygen process furnace to adjust or amend the chemical and/or mechanical properties of steel.

Primary emissions means particulate matter emissions from the basic oxygen process furnace generated during the steel production cycle which are captured and treated in the furnace's primary emission control system.

Primary emission control system means the combination of equipment used for the capture and collection of primary emissions (*e.g.*, an open hood capture system used in conjunction with an electrostatic precipitator or a closed hood system used in conjunction with a scrubber).

Primary oxygen blow means the period in the steel production cycle of a basic oxygen process furnace during which oxygen is blown through the molten iron bath by means of a lance inserted from the top of the vessel (top-blown) or through tuyeres in the bottom and/or sides of the vessel (bottom-blown).

Responsible official means responsible official as defined in § 63.2.

Secondary emissions means particulate matter emissions that are not controlled by a primary emission control system, including emissions that escape from open and closed hoods, lance hole openings, and gaps or tears in ductwork to the primary emission control system.

Secondary emission control system means the combination of equipment used for the capture and collection of secondary emissions from a basic oxygen process furnace.

Sinter cooler means the apparatus used to cool the hot sinter product that is transferred from the discharge end through contact with large volumes of induced or forced draft air.

Sinter plant means the machine used to produce a fused clinker-like aggregate or sinter of fine iron-bearing materials suited for use in a blast furnace. The machine is composed of a continuous traveling grate that conveys a bed of ore fines and other finely divided iron-bearing material and fuel (typically coke breeze), a burner at the feed end of the grate for ignition, and a series of downdraft windboxes along the length of the strand to support downdraft combustion and heat sufficient to produce a fused sinter product.

Skimming station means the locations inside a basic oxygen process furnace shop where slag is removed from the top of the molten metal bath.

Steel production cycle means the operations conducted within the basic oxygen process furnace shop that are required to produce each batch of steel. The following operations are included: scrap charging, preheating (when done), hot metal charging, primary oxygen blowing, sampling, (vessel turndown and turnup), additional oxygen blowing (when done), tapping, and deslagging. The steel production cycle begins when the scrap is charged to the furnace and ends after the slag is emptied from the vessel into the slag pot.

Top-blown furnace means any basic oxygen process furnace in which oxygen is introduced into the bath of molten iron by means of an oxygen lance inserted from the top of the vessel.

Windboxes means the compartments that provide for a controlled distribution of downdraft combustion air as it is drawn through the sinter bed of a sinter plant to make the fused sinter product.

Tables to Subpart FFFFF of Part 63

TABLE 1 TO SUBPART FFFFF OF PART 63.—EMISSION AND OPACITY LIMITS

[As required in § 63.7790(a), you must comply with each applicable emission and opacity limit in the following table]

For . . .	You must comply with each of the following . . .
1. Each windbox exhaust stream at an existing sinter plant.	You must not cause to be discharged to the atmosphere any gases that contain particulate matter in excess of 0.4 lb/ton of product sinter.
2. Each windbox exhaust stream at a new sinter plant.	You must not cause to be discharged to the atmosphere any gases that contain particulate matter in excess of 0.3 lb/ton of product sinter.
3. Each discharge end at an existing sinter plant	a. You must not cause to be discharged to the atmosphere any gases that exit from one or more control devices that contain, on a flow-weighted basis, particulate matter in excess of 0.02 gr/dscf [1]; and b. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the building or structure housing the discharge end that exhibit opacity greater than 20 percent (6-minute average).
4. Each discharge end at a new sinter plant	a. You must not cause to be discharged to the atmosphere any gases that exit from one or more control devices that contain, on a flow weighted basis, particulate matter in excess of 0.01 gr/dscf; and b. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the building or structure housing the discharge end that exhibit opacity greater than 10 percent (6-minute average).
5. Each sinter cooler stack at an existing sinter plant.	You must not cause to be discharged to the atmosphere any gases that contain particulate matter in excess of 0.03 gr/dscf.
6. Each sinter cooler stack at a new sinter plant ..	You must not cause to be discharged to the atmosphere any gases that contain particulate matter in excess of 0.01 gr/dscf.
7. Each casthouse at an existing blast furnace	a. You must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.01 gr/dscf; and b. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the casthouse or structure housing the blast furnace that exhibit opacity greater than 20 percent (6-minute average).
8. Each casthouse at a new blast furnace	a. You must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.003 gr/dscf; and b. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the casthouse or structure housing the blast furnace that exhibit opacity greater than 15 percent (6-minute average).

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TABLE 1 TO SUBPART FFFFF OF PART 63.—EMISSION AND OPACITY LIMITS—Continued

[As required in § 63.7790(a), you must comply with each applicable emission and opacity limit in the following table]

For . . .	You must comply with each of the following . . .
9. Each BOPF at a new or existing shop	a. You must not cause to be discharged to the atmosphere any gases that exit from a primary emission control system for a BOPF with a closed hood system at a new or existing BOPF shop that contain, on a flow-weighted basis, particulate matter in excess of 0.03 gr/dscf during the primary oxygen blow [2]; b. You must not cause to be discharged to the atmosphere any gases that exit from a primary emission control system for a BOPF with an open hood system that contain, on a flow-weighted basis, particulate matter in excess of 0.02 gr/dscf during the steel production cycle for an existing BOPF shop or 0.01 gr/dscf during the steel production cycle for a new BOPF shop [2]; and c. You must not cause to be discharged to the atmosphere any gases that exit from a control device used solely for the collection of secondary emissions from the BOPF that contain particulate matter in excess of 0.01 gr/dscf for an existing BOPF shop or 0.0052 gr/dscf for a new BOPF shop.
10. Each hot metal transfer, skimming, and desulfurization operation at a new or existing BOPF shop.	You must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.01 gr/dscf for an existing BOPF shop or 0.003 gr/dscf for a new BOPF shop.
11. Each ladle metallurgy operation at a new or existing BOPF shop.	You must not cause to be discharged to the atmosphere any gases that exit from a control device that contain particulate matter in excess of 0.01 gr/dscf for an existing BOPF shop or 0.004 gr/dscf for a new BOPF shop.
12. Each roof monitoring at an existing BOPF shop.	You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the BOPF shop or any other building housing the BOPF or BOPF shop operation that exhibit opacity greater than 20 percent (3-minute average).
13. Each roof monitor at a new BOPF shop	a. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the BOPF shop or other building housing a bottom-blown BOPF or BOPF shop operations that exhibit opacity (for any set of 6-minute averages) greater than 10 percent, except that one 6-minute period not to exceed 20 percent may occur once per steel production cycle; or b. You must not cause to be discharged to the atmosphere any secondary emissions that exit any opening in the BOPF shop or other building housing a top-blown BOPF or BOPF shop operations that exhibit opacity (for any set of 3-minute averages) greater than 10 percent, except that one 3-minute period greater than 10 percent but less than 20 percent may occur once per steel production cycle.

[1] This limit applies if the cooler is vented to the same control device as the discharge end.
[2] This limit applies to control devices operated in parallel for a single BOPF during the oxygen blow.

TABLE 2 TO SUBPART FFFFF OF PART 63.—INITIAL COMPLIANCE WITH EMISSION AND OPACITY LIMITS

[As required in § 63.7825(a)(1), you must demonstrate initial compliance with the emission and opacity limits according to the following table]

For . . .	You have demonstrated initial compliance if . . .
1. Each windbox exhaust stream at an existing sinter plant.	The process-weighted mass rate of particulate matter from a windbox exhaust stream, measured according to the performance test procedures in § 63.7822(c), did not exceed 0.4 lb/ton of product sinter.
2. Each windbox exhaust stream at a new sinter plant.	The process-weighted mass rate of particulate matter from a windbox exhaust stream, measured according to the performance test procedures in § 63.7822(c), did not exceed 0.3 lb/ton of product sinter.
3. Each discharge end at an existing sinter plant	a. The flow-weighted average concentration of particulate matter from one or more control devices applied to emissions from a discharge end, measured according to the performance test procedures in § 63.7822(d), did not exceed 0.02 gr/dscf; and b. The opacity of secondary emissions from each discharge end, determined according to the performance test procedures in § 63.7823(c), did not exceed 20 percent (6-minute average).
4. Each discharge end at a new sinter plant	a. The flow-weighted average concentration of particulate matter from one or more control devices applied to emissions from a discharge end, measured according to the performance test procedures in § 63.7822(d), did not exceed 0.01 gr/dscf; and b. The opacity of secondary emissions from each discharge end, determined according to the performance test procedures in § 63.7823(c), did not exceed 10 percent (6-minute average).
5. Each sinter cooler stack at an existing sinter plant.	The average concentration of particulate matter from a sinter cooler stack, measured according to the performance test procedures in § 63.7822(b), did not exceed 0.03 gr/dscf.
6. Each sinter cooler stack at a new sinter plant	The average concentration of particulate matter from a sinter cooler stack, measured according to the performance test procedures in § 63.7822(b), did not exceed 0.01 gr/dscf.
7. Each casthouse at an existing blast furnace	a. The average concentration of particulate matter from a control device applied to emissions from a casthouse, measured according to the performance test procedures in § 63.7822(e), did not exceed 0.01 gr/dscf; and b. The opacity of secondary emissions from each casthouse, determined according to the performance test procedures in § 63.7823(c), did not exceed 20 percent (6-minute average).

TABLE 2 TO SUBPART FFFFF OF PART 63.—INITIAL COMPLIANCE WITH EMISSION AND OPACITY LIMITS—Continued

[As required in § 63.7825(a)(1), you must demonstrate initial compliance with the emission and opacity limits according to the following table]

For . . .	You have demonstrated initial compliance if . . .
8. Each casthouse at a new blast furnace	a. The average concentration of particulate matter from a control device applied to emissions from a casthouse, measured according to the performance test procedures in § 63.7822(e), did not exceed 0.003 gr/dscf; and b. The opacity of secondary emissions from each casthouse, determined according to the performance test procedures in § 63.7823(c), did not exceed 15 percent (6-minute average).
9. Each BOPF at a new or existing BOPF shop	a. The average concentration of particulate matter from a primary emission control system applied to emissions from a BOPF with a closed hood system, measured according to the performance test procedures in § 63.7822(f), did not exceed 0.03 gr/dscf for a new or existing BOPF shop; b. The average concentration of particulate matter from a primary emission control system applied to emissions from a BOPF with an open hood system, measured according to the performance test procedures in § 63.7822(g), did not exceed 0.02 gr/dscf for an existing BOPF shop or 0.01 gr/dscf for a new BOPF shop; and c. The average concentration of particulate matter from a control device applied solely to secondary emissions from a BOPF, measured according to the performance test procedures in § 63.7822(g), did not exceed 0.01 gr/dscf for an existing BOPF shop or 0.0052 gr/dscf for a new BOPF shop.
10. Each hot metal transfer skimming, and desulfurization at a new or existing BOPF shop.	The average concentration of particulate matter from a control device applied to emissions from hot metal transfer, skimming, or desulfurization, measured according to the performance test procedures in § 63.7822(h), did not exceed 0.01 gr/dscf for an existing BOPF shop or 0.003 gr/dscf for a new BOPF shop.
11. Each ladle metallurgy operation at a new or existing BOPF shop.	The average concentration of particulate matter from a control device applied to emissions from a ladle metallurgy operation, measured according to the performance test procedures in § 63.7822(h), did not exceed 0.01 gr/dscf for an existing BOPF shop or 0.004 gr/dscf for a new BOPF shop.
12. Each roof monitor at an existing BOPF shop	The opacity of secondary emissions from each BOPF shop, determined according to the performance test procedures in § 63.7823(d), did not exceed 20 percent (3-minute average).
13. Each roof monitor at a new BOPF shop	a. The opacity of the highest set of 6-minute averages from each BOPF shop housing a bottom-blown BOPF, determined according to the performance test procedures in § 63.7823(d), did not exceed 20 percent and the second highest set of 6-minute averages did not exceed 10 percent; or b. The opacity of the highest set of 3-minute averages from each BOPF shop housing a top-blown BOPF, determined according to the performance test procedures in § 63.7823(d), did not exceed 20 percent and the second highest set of 3-minute averages did not exceed 10 percent.

TABLE 3 TO SUBPART FFFFF OF PART 63.—CONTINUOUS COMPLIANCE WITH EMISSION AND OPACITY LIMITS

[As required in § 63.7833(a), you must demonstrate continuous compliance with the emission and opacity limits according to the following table]

For . . .	You must demonstrate continuous compliance by . . .
1. Each windbox exhaust stream at an existing sinter plant.	a. Maintaining emissions of particulate matter at or below 0.4 lb/ton of product sinter; and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
2. Each windbox exhaust stream at a new sinter plant.	a. Maintaining emissions of particulate matter at or below 0.3 lb/ton of product sinter; and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
3. Each discharge end at an existing sinter plant	a. Maintaining emissions of particulate matter from one or more control devices at or below 0.02 gr/dscf; and b. Maintaining the opacity of secondary emissions that exit any opening in the building or structure housing the discharge end at or below 20 percent (6-minute average); and c. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
4. Each discharge end at a new sinter plant	a. Maintaining emissions of particulate matter from one or more control devices at or below 0.01 gr/dscf; b. Maintaining the opacity of secondary emissions that exit any opening in the building or structure housing the discharge end at or below 10 percent (6-minute average); and c. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
5. Each sinter cooler stack at an existing sinter plant.	a. Maintaining emissions of particulate matter at or below 0.03 gr/dscf; and b. Conducting subsequent performance sinter plant tests at least twice during each term of your title V operating permit (at midterm and renewal).
6. Each sinter cooler stack at a new sinter plant	a. Maintaining emissions of particulate matter at or below 0.01 gr/dscf; and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
7. Each casthouse at an existing blast furnace	a. Maintaining emissions of particulate matter from a control device at or below 0.01 gr/dscf;

TABLE 3 TO SUBPART FFFFF OF PART 63.—CONTINUOUS COMPLIANCE WITH EMISSION AND OPACITY LIMITS—Continued

[As required in § 63.7833(a), you must demonstrate continuous compliance with the emission and opacity limits according to the following table]

For . . .	You must demonstrate continuous compliance by . . .
	b. Maintaining the opacity of secondary emissions that exit any opening in the casthouse or structure housing the blast furnace at or below 20 percent (6-minute average); and c. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
8. Each casthouse at a new blast furnace	a. Maintaining emissions of particulate matter from a control device at or below 0.003 gr/dscf; b. Maintaining the opacity of secondary emissions that exit any opening in the casthouse or building housing the casthouse at or below 15 percent (6-minute average); and c. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
9. Each BOPF at a new or existing BOPF shop	a. Maintaining emissions of particulate matter from the primary emission control system for a BOPF with a closed hood system at or below 0.03 gr/dscf; b. Maintaining emissions of particulate matter from the primary emission control system for a BOPF with an open hood system at or below 0.02 gr/dscf for an existing BOPF shop or 0.01 gr/dscf for a new BOPF shop; c. Maintaining emissions of particulate matter from a control device applied solely to secondary emissions from a BOPF at or below 0.01 gr/dscf for an existing BOPF shop or 0.0052 gr/dscf for a new BOPF shop; and d. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
10. Each hot metal transfer, skimming, and desulfurization operation at a new or existing BOPF shop.	a. Maintaining emissions of particulate matter from a control device at or below 0.01 gr/dscf at an existing BOPF or 0.003 gr/dscf for a new BOPF; and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
11. Each ladle metallurgy operation at a new or existing BOPF shop.	a. Maintaining emissions of particulate matter from a control device at or below 0.01 gr/dscf at an existing BOPF shop or 0.004 gr/dscf for a new BOPF shop; and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
12. Each roof monitor at an existing BOPF shop	a. Maintaining the opacity of secondary emissions that exit any opening in the BOPF shop or other building housing the BOPF or shop operation at or below 20 percent (3-minute average); and b. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).
13. Each roof monitor at a new BOPF shop	a. Maintaining the opacity (for any set of 6-minute averages) of secondary emissions that exit any opening in the BOPF shop or other building housing a bottom-blown BOPF or shop operation at or below 10 percent, except that one 6-minute period greater than 10 percent but no more than 20 percent may occur once per steel production cycle; b. Maintaining the opacity (for any set of 3-minute averages) of secondary emissions that exit any opening in the BOPF shop or other building housing a top-blown BOPF or shop operation at or below 10 percent, except that one 3-minute period greater than 10 percent but less than 20 percent may occur once per steel production cycle; and c. Conducting subsequent performance tests at least twice during each term of your title V operating permit (at midterm and renewal).

TABLE 4 TO SUBPART FFFFF OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFFF

[As required in § 63.7850, you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) shown in the following table]

Citation	Subject	Applies to Subpart FFFFF	Explanation
§ 63.1	Applicability	Yes.	
§ 63.2	Definitions	Yes.	
§ 63.3	Units and Abbreviations	Yes.	
§ 63.4	Prohibited Activities	Yes.	
§ 63.5	Construction/Reconstruction	Yes.	
§ 63.6(a), (b), (c), (d), (e), (f), (g), (h)(2)(ii)–(h)(9).	Compliance with Standards and Maintenance Requirements.	Yes.	
§ 63.6(h)(2)(i)	Determining Compliance with Opacity and VE Standards.	No	Subpart FFFFF specifies Method 9 in appendix A to part 60 of this chapter to comply with roof monitor opacity limits.
§ 63.7(a)(1)–(2)	Applicability and Performance Test Dates.	No	Subpart FFFFF and specifies performance test applicability and dates.
§ 63.7(a)(3), (b), (c)–(h)	Performance Testing Requirements	Yes.	
§ 63.8(a)(1)–(a)(3), (b), (c)(1)–(3), (c)(4)(i)–(e), (c)(7)–(8), (f)(1)–(5), (g)(1)–(4).	Monitoring Requirements	Yes	CMS requirements in § 63.8(c)(4) (i)–(ii), (c)(5) and (6), (d), and (e) apply only to COMS for electrostatic precipitators.

Attachment 1
Attachment 1

TABLE 4 TO SUBPART FFFFF OF PART 63.—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART FFFFF—Continued

[As required in § 63.7850, you must comply with the requirements of the NESHAP General Provisions (40 CFR part 63, subpart A) shown in the following table]

Citation	Subject	Applies to Subpart FFFFF	Explanation
§ 63.8(a)(4)	Additional Monitoring Requirements for Control Devices in § 63.11.	No	Subpart FFFFF does not require flares.
§ 63.8(c)(4)	Continuous Monitoring System Requirements.	No	Subpart FFFFF specifies requirements for operation of CMS.
§ 63.8(f)(6)	RATA Alternative	No.	
§ 63.9	Notification Requirements	Yes	Additional notifications for CMS in § 63.9(g) apply to COMS for electrostatic precipitators.
§ 63.9(g)(5)	DATA Reduction	No	Subpart FFFFF specifies data reduction requirements.
§ 63.10(a), (b)(1)–(2)(xii), (b)(2)(xiv), (b)(3), (c)(1)–(6), (c)(9)–(15), (d), (e)(1)–(2), (e)(4), (f).	Recordkeeping and Reporting Requirements.	Yes	Additional records for CMS in § 63.10(c) (1)–(6), (9)–(15), and reports in § 63.10(d)(1)–(2) apply only to COMS for electrostatic precipitators.
§ 63.10(b)(2)(xiii)	CMS Records for RATA Alternative	No.	
§ 63.10(c)(7)–(8)	Records of Excess Emissions and Parameter Monitoring Exceedances for CMS.	No	Subpart FFFFF specifies record requirements.
§ 63.11	Control Device Requirements	No	Subpart FFFFF does not require flares.
§ 63.12	State Authority and Delegations	Yes.	
§ 63.13–§ 63.15	Addresses, Incorporation by Reference, Availability of Information.	Yes.	

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