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

12/11/02

RE: Proposed Title V Chapter 3745-77 Permit
02-04-01-0193
Millennium Inorganic Chemicals, Inc. - Plant 2

Attn: Genevieve Damico AR-18J
United States Environmental Protection Agency
Region V
77 West Jackson Blvd.
Chicago, IL 60604-3590

Dear Ms. Damico:

The proposed issuance of the Title V permit for Millennium Inorganic Chemicals, Inc. - Plant 2, has been created in Ohio EPA's State Air Resources System (STARS) on 12/11/02, for review by USEPA. This proposed action is identified in STARS as 3-Title V Proposed Permit T+C covering the facility specific terms and conditions, and Title V Proposed Permit covering the general terms and conditions. This proposed permit will be processed for issuance as a final action after forty-five (45) days from USEPA's receipt of this certified letter if USEPA does not object to the proposed permit. Please contact me at (614) 644-3631 by the end of the forty-five (45) day review period if you wish to object to the proposed permit.

Very truly yours,

Michael W. Ahern

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

cc: Northeast District Office
File, DAPC PMU

State of Ohio Environmental Protection Agency

PROPOSED TITLE V PERMIT

Issue Date: 12/11/02	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: 02-04-01-0193 to:
Millennium Inorganic Chemicals, Inc. - Plant 2
2426 Middle Road
Ashtabula, OH 44004

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

B013 (Natural Gas Fired Combustion Turbine)
Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

B014 (Natural Gas Fired Combustion Turbine)
Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

B015 (Natural Gas Fired Combustion Turbine)
Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

B016 (Natural Gas Fired Combustion Turbine)
Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

B017 (Natural Gas Fired Combustion Turbine)
Natural gas -fired combustion turbine (65.1 mmbtu/hr) located at the co-gen plant.

F001 (Roadways and Parking Lots- TiO2 Unit)
Roadways and parking lots used for the TiO2 process.

F002 (Roadways and Parking Lots - TiCl4)
Roadways and parking lots used for the TiCl4 process.

P001 (TiCl4 Vaporizer - TiO2 Unit)
TiCl4 vaporizer (BA-812), Oxygen Preheater (BA-815), Oxygen preheater (BA-816) and Neutrilazation and Density Adjustment Tank (FA-601)

P002 (TiCl4 Production Unit)
Chlorination, condensation, purification,

NOTE: Several peices of process equipment are associated with the permit ID number P002 (equipment that is vented to the main process stack CB-703 are considered to be part of P002).

P011 (Ore and Coke Recovery)
Ore and Coke Recovery Process includes many pieces of process equipment.

P012 (Spray Dryer #1 - TiO2 Unit)
Spray dryer #1 (FF-919), Spray Dryer Feed Tank (FE-917) and Natural Gas Burner (BA-918)

P013 (Spray Dryer #2 - TiO2 Unit)
Spray Dryer #2 (FF-946), Spray Dryer Feed Tank (FE-614) and Natural Gas Burner (BA-946)

P903 (Coke & Ore Unloading, Storage and Handling - TiCl4 Unit)
Ore and coke loading hopper (FE-208), ore and coke conveyors/bucket elevator (JD-200 through 204), Ore and Coke Blowpot conveying system, Storage Silos,

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 3745-77-08(E) 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:

Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330) 425-9171

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, 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. 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))
ii. **For emission limitations, operational restrictions, and control device operating parameter limitations:**

(a) Written reports of (i) any deviations from federally enforceable 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 taken, shall be promptly made to the appropriate Ohio EPA District Office or local air agency. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, i.e., in Part III of this Title V permit, the written 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. 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. These written reports shall satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the submission of monitoring reports every six months and the requirements (in part) of OAC rule 3745-77-07(A)(3)(c)(iii) pertaining to the prompt reporting of all deviations. See B.6 below if no deviations occurred during the quarter.

(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) ,(ii) and (iii))

(b) 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 deviation reporting requirements for this Title V permit, written reports that identify each malfunction that occurred during each calendar quarter shall be submitted, at a minimum, quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year, and shall cover the previous calendar quarters.

In identifying each deviation caused by a malfunction, the permittee shall specify the applicable requirement 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. Also, if a deviation caused by a malfunction is identified in a written report submitted pursuant to paragraph (a) above, a separate report is not required for that malfunction pursuant to this paragraph. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing, at a minimum, on a quarterly basis.

Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation, operational restriction, and control device operating parameter limitation shall be reported in the same manner as described above for malfunctions. These written reports for malfunctions (and scheduled maintenance projects, if appropriate) shall satisfy the requirements (in part) of OAC rule 3745-77-07(A)(3)(c)(iii) pertaining to the prompt reporting of all deviations.

(Authority for term: OAC rules 3745-77-07(A)(3)(c)(iii))

iii. **For monitoring, record keeping, and reporting requirements:**

Written reports that identify any deviations from the federally enforceable monitoring, record keeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year, for the previous six calendar months. 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. These semi-annual written reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c)(i) and (ii) pertaining to the reporting of any deviations related to the monitoring, record keeping, and reporting requirements. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no 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))

2. 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 unit(s) 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 OAC rule 3745-15-06, 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).
(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iii))

3. Risk Management Plans

If the permittee is required to 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"), the permittee shall comply with the requirement to register such a 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, except that no such notice shall be required for changes that qualify as insignificant emission levels or activities as defined in OAC rule 3745-77-01(U). 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.

(For purposes of clarification, the permittee can refer to Engineering Guide #63 that is available in the STARSHIP software package.)
(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))

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 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.

Part II - Specific Facility Terms and Conditions

A. State and Federally Enforcable Section

None

B. State Only Enforceable Section

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

F006 - sandblasting operations
P004 - TiCl4 storage tanks (FB-5A, FB -5B, FB-5C) at TiO2 unit
P009 - lime storage bin (FE-529) for lime neutralization process
P010 - lime storage bin (FE-531) for lime neutralization process
P011 - ore and coke recovery process
P014 - micronizer system - D train
P904 - micronizer system - A train
P905 - micronizer system - B train
P906 - micronizer system - C train
P907 - TiO2 reclaim tank (FE-928 A & B)
Q100 - four CL2 storage tanks (FB-7A, FB-7B, FB-7C, FB-7D)
S001 - rotary drum filter (FG-2)
S002 - rotary drum filter (FG-3)
S003 - rotary drum filter (FG-16)
S004 - rotary drum filter (FG-5)
S005 - rotary drum wash filter (FG-6)
S006 - rotary drum wash filter (FG-7)
S007 - micronizer system - E train
S008 - super sack pack feed bin (FE-008A)
S009 - super sack pack feed bin (FE-008B)
S010 - A Hockmeyer disperser tank (FA-537A) and A Hockmeyer receiver feed bin (FB-953)
S011 - B Hockmeyer disperser tank (FA-537B) and B Hockmeyer receiver feed bin (FB-954)
S012 - C Hockmeyer disperser tank (FA-537C) and C Hockmeyer receiver feed bin (FB-952)
S013 - rail car loading
S014 - tank truck loading
S015 - high density slurry storage tank (FB-533)
S016 - high density slurry storage tank (FB-534)
S017 - high density slurry storage tank (FB-535)
S018 - high density slurry storage tank (FB-538)
S019 - high density slurry storage tank (FB-539)
S020 - high density slurry storage tank (FB-553)
S021 - high density slurry storage tank (FB-556)
S022 - high density slurry storage tank (FB-557)
S023 - high density slurry storage tank (FB-561)

B. State Only Enforceable Section (continued)

The following insignificant emissions units are located at this facility:

F006 - sandblasting operations
P004 - $TiCl_4$ storage tanks (FB-5A, FB -5B, FB-5C) at TiO_2 unit
P009 - lime storage bin (FE-529) for lime neutralization process
P010 - lime storage bin (FE-531) for lime neutralization process
P011 - ore and coke recovery process
P014 - micronizer system - D train
P904 - micronizer system - A train
P905 - micronizer system - B train
P906 - micronizer system - C train
P907 - TiO_2 reclaim tank (FE-928 A & B)
Q100 - four CL_2 storage tanks (FB-7A, FB-7B, FB-7C, FB-7D)
S001 - rotary drum filter (FG-2)
S002 - rotary drum filter (FG-3)
S003 - rotary drum filter (FG-16)
S004 - rotary drum filter (FG-5)
S005 - rotary drum wash filter (FG-6)
S006 - rotary drum wash filter (FG-7)
S007 - micronizer system - E train
S008 - super sack pack feed bin (FE-008A)
S009 - super sack pack feed bin (FE-008B)
S010 - A Hockmeyer disperser tank (FA-537A) and A Hockmeyer receiver feed bin (FB-953)
S011 - B Hockmeyer disperser tank (FA-537B) and B Hockmeyer receiver feed bin (FB-954)
S012 - C Hockmeyer disperser tank (FA-537C) and C Hockmeyer receiver feed bin (FB-952)
S013 - rail car loading
S014 - tank truck loading
S015 - high density slurry storage tank (FB-533)
S016 - high density slurry storage tank (FB-534)
S017 - high density slurry storage tank (FB-535)
S018 - high density slurry storage tank (FB-538)
S019 - high density slurry storage tank (FB-539)
S020 - high density slurry storage tank (FB-553)
S021 - high density slurry storage tank (FB-556)
S022 - high density slurry storage tank (FB-557)
S023 - high density slurry storage tank (FB-561)

B. State Only Enforceable Section (continued)

1.b

S028 - high density slurry tank FB-545
S029 - high density slurry tank FB-546
S030 - high density slurry tank FB-566
S031 - high density slurry tank FB-568
S032 - high density slurry tank FB-554
T013 - storage tank for hydrogen peroxide FB-814
T014 - 15,600-gallon storage tank for toluene FB-815
Z001 - pneumatic air bleed tank FB-404
Z101 - 1,000-gallon storage tank FB-755 for HCl
Z102 - 20,290 gallon storage tank FB-466 for NaOH
Z107 - storage tank for brine (calcium chloride)(FB-764B)
Z200 - storage tank (FB-468) for oil
Z300 - 6,000-gallon storage tank (FB-29) for HCl
Z301 - storage tank FB-6 for NaOH
Z400 - slurry storage tank FB-441
Z401 - slurry storage tank FB-442
Z402 - slurry storage tank FB-443
Z403 - slurry storage tank FB-4A
Z404 - slurry storage tank FB-444
Z418 - slurry storage tank FB-970
Z419 - slurry storage tank FB-975
Z420 - slurry storage tank FB-978
Z421 - slurry storage tank FB-955B
Z422 - slurry storage tank FA-452
Z423 - Derrick screen surge tank FA-431
Z424 - slurry storage tank FB-971
Z425 - slurry storage tank FB-955A
Z426 - Derrick screen surge tank PA-904A
Z427 - Derrick screen surge tank PA-904B
Z428 - 21,480-gallon storage tank FB-21 for HCl
Z429 - slurry treatment tank FA-41
Z430 - slurry treatment tank FA-42
Z431 - slurry treatment tank FA-42A
Z432 - slurry treatment tank FA-43
Z433 - slurry treatment tank FA-43A

B. State Only Enforceable Section (continued)

S028 - high density slurry tank FB-545
S029 - high density slurry tank FB-546
S030 - high density slurry tank FB-566
S031 - high density slurry tank FB-568
S032 - high density slurry tank FB-554
T013 - storage tank for hydrogen peroxide FB-814
T014 - 15,600-gallon storage tank for toluene FB-815
Z001 - pneumatic air bleed tank FB-404
Z101 - 1,000-gallon storage tank FB-755 for HCl
Z102 - 20,290 gallon storage tank FB-466 for NaOH
Z107 - storage tank for brine (calcium chloride)(FB-764B)
Z200 - storage tank (FB-468) for oil
Z300 - 6,000-gallon storage tank (FB-29) for HCl
Z301 - storage tank FB-6 for NaOH
Z400 - slurry storage tank FB-441
Z401 - slurry storage tank FB-442
Z402 - slurry storage tank FB-443
Z403 - slurry storage tank FB-4A
Z404 - slurry storage tank FB-444
Z418 - slurry storage tank FB-970
Z419 - slurry storage tank FB-975
Z420 - slurry storage tank FB-978
Z421 - slurry storage tank FB-955B
Z422 - slurry storage tank FA-452
Z423 - Derrick screen surge tank FA-431
Z424 - slurry storage tank FB-971
Z425 - slurry storage tank FB-955A
Z426 - Derrick screen surge tank PA-904A
Z427 - Derrick screen surge tank PA-904B
Z428 - 21,480-gallon storage tank FB-21 for HCl
Z429 - slurry treatment tank FA-41
Z430 - slurry treatment tank FA-42
Z431 - slurry treatment tank FA-42A
Z432 - slurry treatment tank FA-43
Z433 - slurry treatment tank FA-43A

1.c Z434 - slurry treatment tank FA-44
Z435 - filter feed tank FA-602
Z436 - sodium aluminate storage tank FB-3B
Z437 - tetrasodium pyrophosphate storage tank FA-309
Z438 - tetrasodium pyrophosphate makeup tank FA-310
Z439 - sodium silicate storage tank FB-3A
Z440 - aluminate sulfate storage tank FA-311
Z441 - 2,500-gallon storage tank FA-306 for aqueous TiCl4
Z442 - caustic storage tank FB-555A
Z447 - rapid mix tank FA-606
Z448 - rapid mix tank FA-607
Z449 - thickener tank FA-603
Z450 - thickener tank FA-31X
Z501 - natural gas-fired, back-up electric power generator 1
Z502 - natural gas-fired, back-up electric power generator 2
Z503 - natural gas-fired, back-up electric power generator 3
Z504 - natural gas-fired, back-up electric power generator 4
Z507 - natural gas-fired, back-up electric power generator 5
Z508 - diesel-fired emergency generator - co-generation plant
Z509 - brine storage tank - co-generation plant

Each insignificant emissions unit at this facility must comply with all State and federal regulations, as well as any emissions limitations and/or control requirements contained within a Permit to Install for the emissions unit.

B. State Only Enforceable Section (continued)

Z434 - slurry treatment tank FA-44
Z435 - filter feed tank FA-602
Z436 - sodium aluminate storage tank FB-3B
Z437 - tetrasodium pyrophosphate storage tank FA-309
Z438 - tetrasodium pyrophosphate makeup tank FA-310
Z439 - sodium silicate storage tank FB-3A
Z440 - aluminate sulfate storage tank FA-311
Z441 - 2,500-gallon storage tank FA-306 for aqueous TiCl4
Z442 - caustic storage tank FB-555A
Z447 - rapid mix tank FA-606
Z448 - rapid mix tank FA-607
Z449 - thickener tank FA-603
Z450 - thickener tank FA-31X
Z501 - natural gas-fired, back-up electric power generator 1
Z502 - natural gas-fired, back-up electric power generator 2
Z503 - natural gas-fired, back-up electric power generator 3
Z504 - natural gas-fired, back-up electric power generator 4
Z507 - natural gas-fired, back-up electric power generator 5
Z508 - diesel-fired emergency generator - co-generation plant
Z509 - brine storage tank - co-generation plant

Each insignificant emissions unit at this facility must comply with all State and federal regulations, as well as any emissions limitations and/or control requirements contained within a Permit to Install for the emissions unit.

Part III - Terms and Conditions for Emissions Units

Emissions Unit ID: Natural Gas Fired Combustion Turbine (B013)

Activity Description: Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

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
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NOx combustor control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co. ID: combustion turbine with heat recovery boiler no. 2	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)	The PE rate from the duct heater shall not exceed 0.020 lb/mmBtu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-17-11(B)(4)	The PE rate from the exhaust of the combustion turbine portion shall not exceed 0.040 pound per million Btu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-18-06(E)	The sulfur dioxide (SO2) emissions shall not exceed 0.5 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.c.
	OAC rule 3745-23-06(B)	See section A.I.2.c.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-13197	The PE rate shall not exceed 3.70 lbs/hr and 14.58 tons/year. SO2 emissions shall not exceed 0.86 lb/hr and 3.46 tons/year. Nitrogen oxides (NOx) emissions shall not exceed 12.53 lbs/hr and 50.37 tons/year. Carbon monoxide (CO) emissions shall not exceed 12.70 lbs/hr and 43.58 tons/year. Organic compound (OC) emissions shall not exceed 2.12 lbs/hr and 8.94 tons. See section A.I.2.d. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B) and the fuel sulfur content requirement of 40 CFR Part 60, Subpart GG.
55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler only	40 CFR Part 60, Subpart Dc	See section A.I.2.e.
Emissions units B013-B017	40 CFR Part 60, Subpart GG	NOx emissions shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. SOx emissions shall not exceed 0.015 percent by volume at 15% oxygen, on a dry basis. See sections A.I.2.a. and A.I.2.f. Sulfur content of natural gas burned shall not exceed 0.8 percent by weight.
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine portion only	OAC rule 3745-31-05(D) PTI 02-13197	The combined emissions of NOx and CO from B013-B017 shall be limited to 187.2 tons/year and 163.4 tons/year, respectively. These annual NOx and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. See section A.I.2.g.

2. Additional Terms and Conditions

2.a The emission limitation(s) specified by this rule is (are) less stringent than the emission limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions (continued)

2.b Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0 degrees Fahrenheit) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an emissions rate of 3.70 lbs/hr at 0 degrees Fahrenheit.

2.c The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-13197.

2.d The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device. The 12.53 lbs/hour allowable NOx emissions rate, the 12.70 lbs/hour allowable CO emissions rate and the 2.12 lbs/hour allowable OC emissions rate are established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these hourly emissions limits.

2.e The duct burner portion is exempted from the SO2 limits and from the PE limits referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel.

2.f The combustion turbine portion of this emissions unit is exempted from the NOx emissions monitoring and the monitoring of the water to fuel ratio being fired in the turbine referenced in 40 CFR 60.334(a), as long as water injection to control NOX emissions is not employed at this emissions unit.

2.g The maximum quantity of natural gas which may be burned in emissions units B013-B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units on January 31, 2001, the permittee shall not exceed the following natural gas usage limitations:

Calendar Month(s) Following Startup	Allowable Cumulative Total Volume of Natural Gas Burned (millions of cubic feet)
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.334(b), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas supplied to this emissions unit in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).

c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.

3. The permittee shall maintain and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption in each portion of this combined cycle unit.

4. The permittee shall maintain monthly records of the following information:

a. the volume of natural gas burned in this emissions unit (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017, combined (in millions of cubic feet);

c. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);

d. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

e. the volume of natural gas burned during the rolling, 12-month period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017, combined; and

f. the number of hours of operation of this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

2. 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.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations.

IV. Reporting Requirements (continued)

4. The permittee shall submit annual reports which specify the emissions of particulates, SO2, NOx, CO and OC from this emissions unit for the previous calendar year, tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

5. The permittee shall submit annual reports which specify the emissions of NOx and OC from emissions units B013-B017, combined, for the previous calendar year. These reports shall be submitted by April 15 of each year.

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

V. Testing Requirements (continued)

1.c Emission Limitation: 3.70 lbs/hr PE.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the PE rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = PE rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.0193 lb/mmBtu, as specified in AP-42, Table 3.1-1, chapter 3.1 (10/96).

ii. Determination of the PE rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emission factor for PE, which is 1.9 lbs/million cubic feet of fuel burned as specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

iii. Determination of the total PE rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total PE rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

1.d Emission Limitation: 0.86 lb/hr SO2.

Applicable Compliance Method: The measured SO2 emission rate during 100% turbine load and a maximum heat recovery steam generator firing rate was determined to be 0.0 lb/hr via U.S. EPA Methods 1-4 and 6C tests conducted on June 8, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 12.53 lbs/hr NOx.

Applicable Compliance Method: The measured NOx emission rate during 30% turbine load and a normal heat recovery steam generator firing rate was determined to be 10.8 lbs/hr via U.S. EPA Methods 1-4 and 20 tests conducted on June 7, 2001. The measured NOx emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 20 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.f Emission Limitation: 12.70 lbs/hr CO.

Applicable Compliance Method: The measured CO emission rate of B016, a similar emissions unit, during 30% turbine load and a maximum heat recovery steam generator firing rate was determined to be 8.8 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on June 4, 2001. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.g Emission Limitation: 2.12 lbs/hr OC.

Applicable Compliance Method: Compliance may be based upon the following methods:

i. Determination of the OC rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = OC rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 millon Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.007 lb/mmBtu, as specified in the manufacturer's emission test data, submitted with the permit to install application.

ii. Determination of the OC rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = OC rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emissions factor for OC, which is 5.5 lbs/million cubic feet of fuel burned as specified in AP-42, Tables 1.4-1 &1.4-2, Chapter 1.4 (3/98).

iii. Determination of the total OC rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total OC rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18, 25 or 25A as appropriate.

1.h Emission Limitations: 14.58 TPY PE, 3.46 TPY SO2, 50.37 TPY NOx, 43.58 TPY CO and 8.94 TPY OC.

Applicable Compliance Method: To determine the annual rate for PE, SO2, NOx, CO and OC, the actual, hourly, emission rate as determined in section A.V.1.c., A.V.1.d., A.V.1.e., A.V.1.f., and A.V.1.g., respectively, shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the monthly operating hours required by the record keeping in section A.III.4., and divided by 2000 lbs/ton.

1.i Emission Limitations: 187.2 TPY NOx and 163.4 TPY CO from emissions units B013-B017.

Applicable Compliance Method: Compliance shall be determined from the sum of the annual NOx emissions and the sum of the annual CO emissions for B013 - B017, as specified in section A.V.1.h.

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: Natural Gas Fired Combustion Turbine (B014)

Activity Description: Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

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
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NOx combustor control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co. ID: combustion turbine with heat recovery boiler no. 3	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)	The PE rate from the duct heater shall not exceed 0.020 lb/mmBtu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-17-11(B)(4)	The PE rate from the exhaust of the combustion turbine portion shall not exceed 0.040 pound per million Btu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-18-06(E)	The sulfur dioxide (SO2) emissions shall not exceed 0.5 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.c.
	OAC rule 3745-23-06(B)	See section A.I.2.c.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-13197	The PE rate shall not exceed 3.70 lbs/hr and 14.58 tons/year. SO2 emissions shall not exceed 0.86 lb/hr and 3.46 tons/year. Nitrogen oxides (NOx) emissions shall not exceed 12.53 lbs/hr and 50.37 tons/year. Carbon monoxide (CO) emissions shall not exceed 12.70 lbs/hr and 43.58 tons/year. Organic compound (OC) emissions shall not exceed 2.12 lbs/hr and 8.94 tons. See section A.I.2.d. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B) and the fuel sulfur content requirement of 40 CFR Part 60, Subpart GG.
55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler only	40 CFR Part 60, Subpart Dc	See section A.I.2.e.
Emissions units B013-B017	OAC rule 3745-31-05(D) PTI 02-13197	The combined emissions of NOx and CO from B013-B017 shall be limited to 187.2 tons/year and 163.4 tons/year, respectively. These annual NOx and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. See section A.I.2.g.
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine portion only	40 CFR Part 60, Subpart GG	NOx emissions shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. SOx emissions shall not exceed 0.015 percent by volume at 15% oxygen, on a dry basis. See sections A.I.2.a. and A.I2.f. Sulfur content of natural gas burned shall not exceed 0.8 percent by weight.

2. Additional Terms and Conditions

2.a The emission limitation(s) specified by this rule is (are) less stringent than the emission limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions (continued)

2.b Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0 degrees Fahrenheit) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an emissions rate of 3.70 lbs/hr at 0 degrees Fahrenheit.

2.c The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-13197.

2.d The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device. The 12.53 lbs/hour allowable NOx emissions rate, the 12.70 lbs/hour allowable CO emissions rate and the 2.12 lbs/hour allowable OC emissions rate are established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these hourly emissions limits.

2.e The duct burner portion is exempted from the SO2 limits and from the PE limits referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel.

2.f The combustion turbine portion of this emissions unit is exempted from the NOx emissions monitoring and the monitoring of the water to fuel ratio being fired in the turbine referenced in 40 CFR 60.334(a), as long as water injection to control NOX emissions is not employed at this emissions unit.

2.g The maximum quantity of natural gas which may be burned in emissions units B013-B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units on January 31, 2001, the permittee shall not exceed the following natural gas usage limitations:

Calendar Month(s) Following Startup	Allowable Cumulative Total Volume of Natural Gas Burned (millions of cubic feet)
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.334(b), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas supplied to this emissions unit in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).

c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.

3. The permittee shall maintain and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption in each portion of this combined cycle unit.

4. The permittee shall maintain monthly records of the following information:

a. the volume of natural gas burned in this emissions unit (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017, combined (in millions of cubic feet);

c. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);

d. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

e. the volume of natural gas burned during the rolling, 12-month period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017, combined; and

f. the number of hours of operation of this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

2. 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.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations.

IV. Reporting Requirements (continued)

4. The permittee shall submit annual reports which specify the emissions of particulates, SO2, NOx, CO and OC from this emissions unit for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

5. The permittee shall submit annual reports which specify the emissions of NOx and OC from emissions units B013-B017, combined, for the previous calendar year. These reports shall be submitted by April 15 of each year.

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

V. Testing Requirements (continued)

1.c Emission Limitation: 3.70 lbs/hr PE.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the PE rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = PE rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.0193 lb/mmBtu, as specified in AP-42, Table 3.1-1, chapter 3.1 (10/96).

ii. Determination of the PE rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emission factor for PE, which is 1.9 lbs/million cubic feet of fuel burned as specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

iii. Determination of the total PE rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total PE rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

1.d Emission Limitation: 0.86 lb/hr SO2.

Applicable Compliance Method: The measured SO2 emission rate during 100% turbine load and a maximum heat recovery steam generator firing rate was determined to be 0.0 lb/hr via U.S. EPA Methods 1-4 and 6C tests conducted on June 6, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 12.53 lbs/hr NOx.

Applicable Compliance Method: The measured NOx emission rate during 30% turbine load and a normal heat recovery steam generator firing rate was determined to be 10.7 lbs/hr via U.S. EPA Methods 1-4 and 20 tests conducted on June 6, 2001. The measured NO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 20 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.f Emission Limitation: 12.70 lbs/hr CO.

Applicable Compliance Method: The measured CO emission rate of B016, a similar emissions unit, during 30% turbine load and a maximum heat recovery steam generator firing rate was determined to be 8.8 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on June 4, 2001. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.g Emission Limitation: 2.12 lbs/hr OC.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the OC rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = OC rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 millon Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.007 lb/mmBtu, as specified in the manufacturer's emission test data, submitted with the permit to install application.

ii. Determination of the OC rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emissions factor for OC, which is 5.5 lbs/million cubic feet of fuel burned as specified in AP-42, Tables 1.4-1 &1.4-2, Chapter 1.4 (3/98).

iii. Determination of the total OC rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total OC rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18, 25 or 25A as appropriate.

1.h Emission Limitations: 14.58 TPY PE, 3.46 TPY SO2, 50.37 TPY NOx, 43.58 TPY CO and 8.94 TPY OC.

Applicable Compliance Method: To determine the annual rate for PE, SO2, NOx, CO and OC, the actual, hourly, emission rate as determined in section A.V.1.c., A.V.1.d., A.V.1.e., A.V.1.f., and A.V.1.g., respectively, shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the monthly operating hours required by the record keeping in section A.III.4., and divided by 2000 lbs/ton.

1.i Emission Limitations: 187.2 TPY NOx and 163.4 TPY CO from emissions units B013-B017.

Applicable Compliance Method: Compliance shall be determined from the sum of the annual NOx emissions and the sum of the annual CO emissions for B013 - B017, as specified in section A.V.1.h.

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: Natural Gas Fired Combustion Turbine (B015)

Activity Description: Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

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
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NOx combustor control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co. ID: combustion turbine with heat recovery boiler no. 4	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)	The PE rate from the duct heater shall not exceed 0.020 lb/mmBtu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-17-11(B)(4)	The PE rate from the exhaust of the combustion turbine portion shall not exceed 0.040 pound per million Btu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-18-06(E)	The sulfur dioxide (SO2) emissions shall not exceed 0.5 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.c.
	OAC rule 3745-23-06(B)	See sectin A.I.2.c.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-13197	The PE rate shall not exceed 3.70 lbs/hr and 14.58 tons/year. SO2 emissions shall not exceed 0.86 lb/hr and 3.46 tons/year. Nitrogen oxides (NOx) emissions shall not exceed 12.53 lbs/hr and 50.37 tons/year. Carbon monoxide (CO) emissions shall not exceed 12.70 lbs/hr and 43.58 tons/year. Organic compound (OC) emissions shall not exceed 2.12 lbs/hr and 8.94 tons. See section A.I.2.d. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B) and the fuel sulfur content requirement of 40 CFR Part 60, Subpart GG.
55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler only	40 CFR Part 60, Subpart Dc	See section A.I.2.e.
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine portion only	40 CFR Part 60, Subpart GG	NOx emissions shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. SOx emissions shall not exceed 0.015 percent by volume at 15% oxygen, on a dry basis. See section A.I.2.a. and A.I.2.f. Sulfur content of natural gas burned shall not exceed 0.8 percent by weight.
Emissions units B013-B017	OAC rule 3745-31-05(D) PTI 02-13197	The combined emissions of NOx and CO from B013-B017 shall be limited to 187.2 tons/year and 163.4 tons/year, respectively. These annual NOx and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. See section A.I.2.g.

2. Additional Terms and Conditions

2.a The emission limitation(s) specified by this rule is (are) less stringent than the emission limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions (continued)

2.b Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0 degrees Fahrenheit) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an emissions rate of 3.70 lbs/hr at 0 degrees Fahrenheit.

2.c The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-13197.

2.d The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device. The 12.53 lbs/hour allowable NOx emissions rate, the 12.70 lbs/hour allowable CO emissions rate and the 2.12 lbs/hour allowable OC emissions rate are established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these hourly emissions limits.

2.e The duct burner portion is exempted from the SO2 limits and from the PE limits referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel.

2.f The combustion turbine portion of this emissions unit is exempted from the NOx emissions monitoring and the monitoring of the water to fuel ratio being fired in the turbine referenced in 40 CFR 60.334(a), as long as water injection to control NOX emissions is not employed at this emissions unit.

2.g The maximum quantity of natural gas which may be burned in emissions units B013-B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units on January 31, 2001, the permittee shall not exceed the following natural gas usage limitations:

Calendar Month(s) Following Startup	Allowable Cumulative Total Volume of Natural Gas Burned (millions of cubic feet)
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.334(b), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas supplied to this emissions unit in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).

c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.

3. The permittee shall maintain and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption in each portion of this combined cycle unit.

4. The permittee shall maintain monthly records of the following information:

a. the volume of natural gas burned in this emissions unit (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017, combined (in millions of cubic feet);

c. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);

d. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

e. the volume of natural gas burned during the rolling, 12-month period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017, combined; and

f. the number of hours of operation of this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

2. 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.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations.

IV. Reporting Requirements (continued)

4. The permittee shall submit annual reports which specify the emissions of particulates, SO2, NOx, CO and OC from this emissions unit for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

5. The permittee shall submit annual reports which specify the emissions of NOx and OC from emissions units B013-B017, combined, for the previous calendar year. These reports shall be submitted by April 15 of each year.

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

V. Testing Requirements (continued)

1.c Emission Limitation: 3.70 lbs/hr PE.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the PE rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = PE rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.0193 lb/mmBtu, as specified in AP-42, Table 3.1-1, chapter 3.1 (10/96).

ii. Determination of the PE rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emission factor for PE, which is 1.9 lbs/million cubic feet of fuel burned as specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

iii. Determination of the total PE rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total PE rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

1.d Emission Limitation: 0.86 lb/hr SO2.

Applicable Compliance Method: The measured SO2 emission rate during 100% turbine load and a maximum heat recovery steam generator firing rate was determined to be 0.2 lb/hr via U.S. EPA Methods 1-4 and 6C tests conducted on June 5, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 12.53 lbs/hr NOx.

Applicable Compliance Method: The measured NOx emission rate during 50% turbine load and a normal heat recovery steam generator firing rate was determined to be 11.0 lbs/hr via U.S. EPA Methods 1-4 and 20 tests conducted on June 6, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 20 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.f Emission Limitation: 12.70 lbs/hr CO.

Applicable Compliance Method: The measured CO emission rate of B016, a similar emissions unit, during 30% turbine load and a maximum heat recovery steam generator firing rate was determined to be 8.8 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on June 4, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.g Emission Limitation: 2.12 lbs/hr OC.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the OC rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = OC rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 millon Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.007 lb/mmBtu, as specified in the manufacturer's emission test data, submitted with the permit to install application.

ii. Determination of the OC rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = OC rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emissions factor for OC, which is 5.5 lbs/million cubic feet of fuel burned as specified in AP-42, Tables 1.4-1 &1.4-2, Chapter 1.4 (3/98).

iii. Determination of the total OC rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total OC rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18, 25 or 25A as appropriate.

1.h Emission Limitations: 14.58 TPY PE, 3.46 TPY SO2, 50.37 TPY NOx, 43.58 TPY CO and 8.94 TPY OC.

Applicable Compliance Method: To determine the annual rate for PE, SO2, NOx, CO and OC, the actual, hourly, emission rate as determined in section A.V.1.c., A.V.1.d., A.V.1.e., A.V.1.f., and A.V.1.g., respectively, shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the monthly operating hours required by the record keeping in section A.III.4., and divided by 2000 lbs/ton.

1.i Emission Limitations: 187.2 TPY NOx and 163.4 TPY CO from emissions units B013-B017.

Applicable Compliance Method: Compliance shall be determined from the sum of the annual NOx emissions and the sum of the annual CO emissions for B013 - B017, as specified in section A.V.1.h.

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: Natural Gas Fired Combustion Turbine (B016)

Activity Description: Natural gas -fired combustion turbine (65.1 mmbtu/hr) and a supplemental natural gas fired (55.0 mmbtu/hr) duct heater/heat recovery boiler all located at the co-gen plant.

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
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NOx combustor control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co. ID: combustion turbine with heat recovery boiler no. 5	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-10(B)	The PE rate from the duct heater shall not exceed 0.020 lb/mmBtu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-17-11(B)(4)	The PE rate from the exhaust of the combustion turbine portion shall not exceed 0.040 pound per million Btu of actual heat input. See sections A.I.2.a. and A.I.2.b.
	OAC rule 3745-18-06(E)	The sulfur dioxide (SO2) emissions shall not exceed 0.5 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.c.
	OAC rule 3745-23-06(B)	See section A.I.2.c.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-13197	The PE rate shall not exceed 3.70 lbs/hr and 14.58 tons/year. SO2 emissions shall not exceed 0.86 lb/hr and 3.46 tons/year. Nitrogen oxides (NOx) emissions shall not exceed 12.53 lbs/hr and 50.37 tons/year. Carbon monoxide (CO) emissions shall not exceed 12.70 lbs/hr and 43.58 tons/year. Organic compound (OC) emissions shall not exceed 2.12 lbs/hr and 8.94 tons. See section A.I.2.d. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B) and the fuel sulfur content requirement of 40 CFR Part 60, Subpart GG.
55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler only	40 CFR Part 60, Subpart Dc	See section A.I.2.e.
Emissions units B013-B017	OAC rule 3745-31-05(D) PTI 02-13197	The combined emissions of NOx and CO from B013-B017 shall be limited to 187.2 tons/year and 163.4 tons/year, respectively. These annual NOx and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. See section A.I.2.g.
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine portion only	40 CFR Part 60, Subpart GG	NOx emissions shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. SOx emissions shall not exceed 0.015 percent by volume at 15% oxygen, on a dry basis. See section A.I.2.a. and A.I.2.f. Sulfur content of natural gas burned shall not exceed 0.8 percent by weight.

2. Additional Terms and Conditions

2.a The emission limitation(s) specified by this rule is (are) less stringent than the emission limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions (continued)

2.b Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner can not be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0 degrees Fahrenheit) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an emissions rate of 3.70 lbs/hr at 0 degrees Fahrenheit.

2.c The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-13197.

2.d The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device. The 12.53 lbs/hour allowable NOx emissions rate, the 12.70 lbs/hour allowable CO emissions rate and the 2.12 lbs/hour allowable OC emissions rate are established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these hourly emissions limits.

2.e The duct burner portion is exempted from the SO2 limits and from the PE limits referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel.

2.f The combustion turbine portion of this emissions unit is exempted from the NOx emissions monitoring and the monitoring of the water to fuel ratio being fired in the turbine referenced in 40 CFR 60.334(a), as long as water injection to control NOX emissions is not employed at this emissions unit.

2.g The maximum quantity of natural gas which may be burned in emissions units B013-B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units on January 31, 2001, the permittee shall not exceed the following natural gas usage limitations:

Calendar Month(s) Following Startup	Allowable Cumulative Total Volume of Natural Gas Burned (millions of cubic feet)
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.334(b), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas supplied to this emissions unit in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).

c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.

3. The permittee shall maintain and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption in each portion of this combined cycle unit.

4. The permittee shall maintain monthly records of the following information:

a. the volume of natural gas burned in this emissions unit (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017, combined (in millions of cubic feet);

c. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);

d. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

e. the volume of natural gas burned during the rolling, 12-month period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017, combined; and

f. the number of hours of operation of this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

2. 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.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations.

IV. Reporting Requirements (continued)

4. The permittee shall submit annual reports which specify the emissions of particulates, SO2, NOx, CO and OC from this emissions unit for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

5. The permittee shall submit annual reports which specify the emissions of NOx and OC from emissions units B013-B017, combined, for the previous calendar year. These reports shall be submitted by April 15 of each year.

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

V. Testing Requirements (continued)

1.c Emission Limitation: 3.70 lbs/hr PE.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the PE rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = PE rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.0193 lb/mmBtu, as specified in AP-42, Table 3.1-1, Chapter 3.1 (10/96).

ii. Determination of the PE rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emission factor for PE, which is 1.9 lbs/million cubic feet of fuel burned as specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

iii. Determination of the total PE rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total PE rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

1.d Emission Limitation: 0.86 lb/hr SO2.

Applicable Compliance Method: The measured SO2 emission rate during 100% turbine load and a maximum heat recovery steam generator firing rate was determined to be 0.1 lb/hr via U.S. EPA Methods 1-4 and 6C tests conducted on June 4, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 12.53 lbs/hr NOx.

Applicable Compliance Method: The measured NOx emission rate during 30% turbine load and a normal heat recovery steam generator firing rate was determined to be 10.0 lbs/hr via U.S. EPA Methods 1-4 and 20 tests conducted on June 4, 2001. The measured NOx emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 20 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.f Emission Limitation: 12.70 lbs/hr CO.

Applicable Compliance Method: The measured CO emission rate during 30% turbine load and a maximum heat recovery steam generator firing rate was determined to be 8.8 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on June 4, 2001. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.g Emission Limitation: 2.12 lbs/hr OC.

Applicable Compliance Method: Compliance shall be based upon the following methods:

i. Determination of the OC rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = OC rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 millon Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.007 lb/mmBtu, as specified in the manufacturer's emission test data, submitted with the permit to install application.

ii. Determination of the OC rate from the duct heater:
E(DH) = mmBtu/hr x cf/1000 Btu x EF.

where:
E(DH) = PE rate from the duct heater, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 55.0 millon Btu per hour, as noted in the permit application.

cf/1000 Btu = the caloric value of a cubic foot of natural gas.

EF = the emissions factor for OC, which is 5.5 lbs/million cubic feet of fuel burned as specified in AP-42, Tables 1.4-1 &1.4-2, Chapter 1.4 (3/98).

iii. Determination of the total OC rate:
E(T) = E(CT) + E(DH).

where:
E(T) = total OC rate, in pounds per hour.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18, 25 or 25A as appropriate.

1.h Emission Limitations: 14.58 TPY PE, 3.46 TPY SO2, 50.37 TPY NOx, 43.58 TPY CO and 8.94 TPY OC.

Applicable Compliance Method: To determine the annual rate for PE, SO2, NOx, CO and OC, the actual, hourly, emission rate as determined in section A.V.1.c., A.V.1.d., A.V.1.e., A.V.1.f., and A.V.1.g., respectively, shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the monthly operating hours required by the record keeping in section A.III.4., and divided by 2000 lbs/ton.

1.i Emission Limitations: 187.2 TPY NOx and 163.4 TPY CO from emissions units B013-B017.

Applicable Compliance Method: Compliance shall be determined from the sum of the annual NOx emissions and the sum of the annual CO emissions for B013 - B017, as specified in section A.V.1.h.

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: Natural Gas Fired Combustion Turbine (B017)

Activity Description: Natural gas -fired combustion turbine (65.1 mmbtu/hr) located at the co-gen plant.

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
65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NOx combustor control device and a heat recovery steam generator; Co. ID: combustion turbine No. 1	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)(4)	The PE rate from the exhaust of the combustion turbine portion shall not exceed 0.040 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-18-06(E)	The sulfur dioxide (SO2) emissions shall not exceed 0.5 pound per million Btu of actual heat input. See section A.I.2.a.
	OAC rule 3745-21-08(B).	See section A.I.2.b.
	OAC rule 3745-23-06(B)	See section A.I.2.b.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-13197	The PE rate shall not exceed 2.60 lbs/hr and 9.76 tons/year. SO2 emissions shall not exceed 0.46 lb/hr and 1.71 tons/year. Nitrogen oxides (NOx) emissions shall not exceed 7.03 lbs/hr and 26.28 tons/year. Carbon monoxide (CO) emissions shall not exceed 8.57 lbs/hr and 25.49 tons/year. Organic compound (OC) emissions shall not exceed 0.46 lb/hr and 1.71 tons. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B) and the fuel sulfur content requirement of 40 CFR, Part 60, Subpart GG. See section A.I.2.c.
	40 CFR Part 60, Subpart GG	NOx emissions shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. SO2 emissions shall not exceed 0.015 percent by volume at 15% oxygen, on a dry basis. See sections A.I.2.a. and A.I.2.f. Sulfur content of natural gas burned shall not exceed 0.8 percent by weight.
B013-B017 emissions units	OAC rule 3745-31-05(D) PTI 02-13197	The combined emissions of NOx and CO from B013-B017 shall be limited to 187.2 tons/year and 163.4 tons/year, respectively. These annual NOx and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned for these emissions units to a cumulative total volume of 3590 million cubic feet on a rolling 12-month summation basis. See section A.I.2.e.

2. Additional Terms and Conditions

2.a The emission limitation(s) specified by this rule is (are) less stringent than the emission limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-13197.

2. Additional Terms and Conditions (continued)

2.c The combustion turbine portion of this emissions unit shall be equipped with a dry, low NOx combustor control device. The 7.03 lbs/hour allowable NOx emissions rate, the 8.57 lbs/hour allowable CO emissions rate and the 0.46 lb/hour allowable OC emissions rate are established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these hourly emissions limits.

2.d The combustion turbine portion is exempted from the NOx emissions monitoring and the monitoring of the water to fuel ratio being fired in the turbine referenced in 40 CFR 60.334(a), as long as water injection to control NOX emissions is not employed at this emissions unit.

2.e The maximum quantity of natural gas which may be burned in emissions units B013-B017 shall not exceed 3590 million cubic feet per year based on a rolling 12-month summation of fuel usage. To ensure enforceability of this provision during the first twelve (12) months of operation following startup of these emissions units on January 31, 2001, the permittee shall not exceed the following natural gas usage limitations:

Calendar Month(s) Following Startup	Allowable Cumulative Total Volume of Natural Gas Burned (millions of cubic feet)
1-1	375.8
1-2	751.7
1-3	1127.6
1-4	1503.4
1-5	1764.2
1-6	2025.0
1-7	2285.9
1-8	2546.7
1-9	2807.5
1-10	3068.4
1-11	3329.2
1-12	3590.0

After the first 12 calendar months of operation following startup of these emissions units, the permittee shall comply with the annual natural gas usage limitations based on rolling, 12-month summations.

II. Operational Restrictions

1. The permittee shall burn only natural gas in this emissions unit.

III. Monitoring and/or Record Keeping Requirements

1. In accordance with 40 CFR 60.334(b), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas supplied to this emissions unit in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. Analysis for fuel sulfur content of the natural gas shall be conducted using the methods listed for gaseous fuels in 40 CFR 60.335(d).

c. For the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring shall be performed twice per month. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, sampling and analysis for fuel sulfur content shall be conducted once per quarter thereafter.

In accordance with U.S. EPA guidance, the fuel-bound nitrogen content will be assumed to be zero as long as natural gas is the fuel utilized in this emissions unit.

2. 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.

3. The permittee shall maintain and operate a properly calibrated natural gas flow rate meter on the combustion turbine to allow for accurate determination of the fuel consumption.

4. The permittee shall maintain monthly records of the following information:

a. the volume of natural gas burned in this emissions unit (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017, combined (in millions of cubic feet);

c. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in this emissions unit (in millions of cubic feet);

d. during the first 12 months of operation following the startup of this emissions unit, the cumulative volume of natural gas burned in emissions units B013 through B017 (in millions of cubic feet);

e. the volume of natural gas burned during the rolling, 12-month period (beginning the 13th calendar month after the startup) for both this emissions unit and emissions units B013 through B017, combined; and

f. the number of hours of operation of this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year.

2. 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.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation and, for the first 12 calendar months of operation following startup of this emissions unit, all exceedances of the maximum allowable cumulative natural gas usage limitations.

IV. Reporting Requirements (continued)

4. The permittee shall submit annual reports which specify the emissions of particulates, SO2, NOx, CO and OC from this emissions unit for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

5. The permittee shall submit annual reports which specify the emissions of NOx and OC from emissions units B013-B017, combined, for the previous calendar year. These reports shall be submitted by April 15 of each year.

V. Testing Requirements

1. Compliance with the emission limitation(s) and fuel restriction in Sections A.I. and A.II. of these terms and conditions shall be determined in accordance with the following method(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Fuel Sulfur Content Limitation: The fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

Applicable Compliance Method: The permittee shall determine compliance with the fuel sulfur content limitation in accordance with the procedures specified in ASTM D 1072-80, D 3031-81, D 4084-82, or D 3246-81 [per 40 CFR 60.335(d)].

1.c Emission Limitation: 2.60 lbs/hr PE.

Applicable Compliance Method: Compliance shall be based upon the following method:

E(CT) = mmBtu/hr x EF.

where:
E(CT) = PE rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.0193 lb/mmBtu, as specified in AP-42, Table 3.1-1, chapter 3.1 (10/96).

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

1.d Emission Limitation: 0.46 lb/hr SO2.

Applicable Compliance Method: The measured SO2 emission rate during 100% turbine load was determined to be 0.1 lb/hr via U.S. EPA Methods 1-4 and 6C tests conducted on June 8, 2001. The measured SO2 emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 7.03 lbs/hr NOx.

Applicable Compliance Method: The measured NOx emission rate during 63% turbine load was determined to be 6.5 lbs/hr via U.S. EPA Methods 1-4 and 20 tests conducted on June 8, 2001. The measured NOx emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 20 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.f Emission Limitation: 8.57 lbs/hr CO.

Applicable Compliance Method: The measured CO emission rate during 100% turbine load and a maximum heat recovery steam generator firing rate was determined to be 5.9 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on June 8, 2001. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.g Emission Limitation: 0.46 lb/hr OC.

Applicable Compliance Method: Compliance shall be based upon the following method:

Determination of the OC rate from the combustion turbine:
E(CT) = mmBtu/hr x EF.

where:
E(CT) = OC rate from the combustion turbine, in pounds per hour.

mmBtu/hr = the maximum rated heat input capacity, which is 65.1 million Btu per hour at 0 degrees Fahrenheit, as noted in the permit application.

EF = the emission factor for PE, which is 0.007 lb/mmBtu, as specified in the manufacturer's emission test data, submitted with the permit to install application.

If required, the permittee shall demonstrate compliance with this emission limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18, 25 or 25A as appropriate.

1.h Emission Limitations: 9.76 TPY PE, 1.71 TPY SO2, 26.28 TPY NOx, 25.49 TPY CO and 1.71 TPY OC.

Applicable Compliance Method: To determine the annual rate for PE, SO2, NOx, CO and OC, the actual, hourly, emission rate as determined in section A.V.1.c., A.V.1.d., A.V.1.e., A.V.1.f., and A.V.1.g., respectively, shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the monthly operating hours, required by the record keeping in section A.III.4., and divided by 2000 lbs/ton.

1.i Emission Limitations: 187.2 TPY NOx and 163.4 TPY CO from emissions units B013-B017.

Applicable Compliance Method: Compliance shall be determined from the sum of the annual NOx emissions and the sum of the annual CO emissions for B013 - B017, as specified in section A.V.1.h.

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: Roadways and Parking Lots- TiO2 Unit (F001)

Activity Description: Roadways and parking lots used for the TiO2 process.

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
Paved roadways and parking areas	OAC rule 3745-17-07(B)(4)	There shall be no visible particulate emissions except for a period of time not to exceed 6 minutes during any 60-minute period.
	OAC rule 3745-17-08(B), (B)(8), (B)(9)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed (see Sections A.I.2.a., A.I.2.c., A.I.2.e., A.I.2.f. and A.I.2.g.).
Unpaved roadways	OAC rule 3745-17-07(B)(5)	There shall be no visible particulate emissions except for a period of time not to exceed 13 minutes during any 60-minute period.
	OAC rule 3745-17-08(B), (B)(2)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed (see Sections A.I.2.b. through A.I.2.g.).

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.b The permittee shall employ reasonably available control measures on all unpaved roadways for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance. Use of used oil as a dust suppressant is prohibited.

2. Additional Terms and Conditions (continued)

2.c The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved or unpaved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

2.d Any unpaved roadway, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled with the control measure(s) specified above for paved surfaces. Any unpaved roadway that takes the characteristics of a paved roadway due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways and parking areas. Any unpaved roadway or parking area that is paved shall be subject to the visible emission limitation for paved roadways and parking areas.

2.e The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

2.f Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

2.g Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of each of the unpaved and paved roadway segments and each of the paved and unpaved parking areas in accordance with the following frequencies:

roadway/parking area surface type	minimum inspection frequency
all paved	three days/week
all unpaved	three days/week

2. The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

3. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from at least three days per week to weekly if the following conditions are met:

a. for one full quarter the permittee's inspections indicate no visible emissions; and

b. the permittee continues to comply with all the record keeping and monitoring requirements specified in section A.III.

The permittee shall revert to three days per week readings if any visible emissions are observed.

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

4. The permittee shall maintain records of the following information:

a. the road surface type;

b. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

c. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

d. the dates the control measures were implemented; and

e. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in section A.III.4.e. shall be kept separately for (i) the paved roadways and paved parking areas and (ii) the unpaved roadways, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify any of the following occurrences:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

1.a Emission Limitation: No visible particulate emissions except for six minutes during any 60-minute period from the paved roadways and parking areas.

Applicable Compliance Method: Compliance with the visible emission limitations for the paved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

1.b Emission Limitation: No visible particulate emissions except for thirteen minutes during any 60-minute period from the unpaved roadways.

Applicable Compliance Method: Compliance with the visible emission limitations for the unpaved roadways identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

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: Roadways and Parking Lots - TiCl4 (F002)

Activity Description: Roadways and parking lots used for the TiCl4 process.

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
Paved roadways and parking areas	OAC rule 3745-17-07(B)(4)	There shall be no visible particulate emissions except for a period of time not to exceed 6 minutes during any 60-minute period.
	OAC rule 3745-17-08(B), (B)(8), (B)(9)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed (see Sections A.I.2.a., A.I.2.c., A.I.2.e., A.I.2.f. and A.I.2.g.).
Unpaved roadways	OAC rule 3745-17-07(B)(5)	There shall be no visible particulate emissions except for a period of time not to exceed 13 minutes during any 60-minute period.
	OAC rule 3745-17-08(B), (B)(2)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed (see Sections A.I.2.b. through A.I.2.g.).

2. Additional Terms and Conditions

2.a The permittee shall employ reasonably available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.b The permittee shall employ reasonably available control measures on all unpaved roadways for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance. Use of used oil as a dust suppressant is prohibited.

2. Additional Terms and Conditions (continued)

2.c The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved or unpaved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

2.d Any unpaved roadway, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled with the control measure(s) specified above for paved surfaces. Any unpaved roadway that takes the characteristics of a paved roadway due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways and parking areas. Any unpaved roadway or parking area that is paved shall be subject to the visible emission limitation for paved roadways and parking areas.

2.e The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

2.f Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

2.g Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of each of the unpaved and paved roadway segments and each of the paved and unpaved parking areas in accordance with the following frequencies:

roadway/parking area surface type	minimum inspection frequency
all paved	three days/week
all unpaved	three days/week

2. The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

3. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from at least three days per week to weekly if the following conditions are met:

a. for one full quarter the permittee's inspections indicate no visible emissions; and

b. the permittee continues to comply with all the record keeping and monitoring requirements specified in section A.III.

The permittee shall revert to three days per week readings if any visible emissions are observed.

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

4. The permittee shall maintain records of the following information:

a. the road surface type;

b. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

c. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

d. the dates the control measures were implemented; and

e. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in section A.III.4.e. shall be kept separately for (i) the paved roadways and paved parking areas and (ii) the unpaved roadways, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify any of the following occurrences:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

1.a Emission Limitation: No visible particulate emissions except for six minutes during any 60-minute period from the paved roadways and parking areas.

Applicable Compliance Method: Compliance with the visible emission limitations for the paved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

1.b Emission Limitation: No visible particulate emissions except for thirteen minutes during any 60-minute period from the unpaved roadways.

Applicable Compliance Method: Compliance with the visible emission limitations for the unpaved roadways identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

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: TiCl4 Vaporizer - TiO2 Unit (P001)

Activity Description: TiCl4 vaporizer (BA-812), Oxygen Preheater (BA-815), Oxygen preheater (BA-816) and Neutrilazation and Density Adjustment Tank (FA-601)

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
Oxidation process: including an aluminum chloride generator (DC-813), an oxidation reactor (DC-827) with a paire filter (FD-822) product capture device, a slurry tank (FA-813), a neutralization tank (FA-601), and a packed column, caustic scrubber (DA-402) with a venturi inlet and mist eliminator	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from any stack egress shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-11	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 3745-31-05(A)(3) PTI 02-16459	The PE rate shall not exceed 41.2 lbs/hr from the stack egress point of the caustic scrubber (DA-402). The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). See section A.I.2.a.
16.8 mmBtu/hr natural gas-fired titanium tetrachloride (TiCl4) vaporizer (BA-812)	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.
	OAC rule 3745-21-08(B) OAC rule 3745-23-06(B)	See section A.I.2.b. below.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-16459	The carbon monoxide (CO) emissions shall not exceed 0.67 lb/hr. The nitrogen oxides (NOx) emissions shall not exceed 3.86 lbs/hr. The organic compound (OC) emissions shall not exceed 0.18 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-10(B)(1), 3745-21-08(B), and 3745-23-06(B).
9.5 mmBtu/hr natural gas-fired oxygen (O2) preheater (BA-815)	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.
	OAC rule 3745-21-08(B) OAC rule 3745-23-06(B)	See section A.I.2.b. below.
	OAC rule 3745-31-05(A)(3) PTI 02-11771	The CO emissions shall not exceed 0.46 lb/hr. The NOx emissions shall not exceed 2.13 lbs/hr. The OC emissions shall not exceed 0.10 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-10(B)(1), 3745-21-08(B), and 3745-23-06(B).
2.2 mmBtu/hr natural gas-fired oxygen (O2) preheater (BA-816)	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.
	OAC rule 3745-21-08(B) OAC rule 3745-23-06(B)	See section A.I.2.b. below.
	OAC rule 3745-31-05(A)(3) PTI 02-16459	The CO emissions shall not exceed 0.18 lb/hr. The NOx emissions shall not exceed 0.21 lb/hr. The OC emissions shall not exceed 0.02 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-10(B)(1), 3745-21-08(B), and 3745-23-06(B).
All egress points	OAC rule 3745-31-05(A)(3) PTI 02-16459	The PE rate shall not exceed 183.5 tons/year. The CO rate shall not exceed 5.74 tons/year. The NOx rate shall not exceed 27.18 tons/year. The OC rate shall not exceed 1.33 tons/year.

2. Additional Terms and Conditions

2.a Exhaust gases from the paire filter (FD-822) product capture device, serving the oxidation reactor, are routed to the Chlorination Process (P002) instead of the atmosphere. However, during startup or equipment pressure testing, nitrogen or oxygen is used to warm the oxygen preheater(s), BA-815 and BA-816, so that no air contaminant emissions are generated when paire filter gases are exhausted to the atmosphere.

2. Additional Terms and Conditions (continued)

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-11771.

II. Operational Restrictions

1. The pH of the scrubber liquor for the packed column, caustic scrubber (DA-402) shall be maintained at or above 8 at all times, except during calibration, startup and shutdown periods, while the emissions unit is in operation.

2. The packed column, caustic scrubber (DA-402) water flow rate shall be maintained at a minimum value, in gallons per minute, established either during the most recent performance test that demonstrated that the emissions unit was in compliance or by the scrubber manufacturer's written recommendation, while the emissions unit is in operation, except during calibration, startup and shutdown periods.

3. The permittee shall burn only natural gas in the TiCl4 vaporizer (BA-812) burner and in the O2 preheater burners (BA-815 and BA-816).

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall properly operate and maintain equipment to monitor and record the operating parameters of packed column, caustic scrubber (DA-402) while the emissions unit is in operation. Each monitor and recorder 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 pH of the scrubber liquor, on a once per 12-hour basis,

b. the scrubber water flow rate, in gallons per minute, on a once per 12-hour basis, and

c. a log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. 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 quarterly deviation (excursion) reports that identify each recorded reading during which the following parameters of the packed column, caustic scrubber (DA-402) liquor parameters were not maintained as specified in section A.II:

a. the pH of the scrubber liquor, and

b. the scrubber water flow rate.

2. The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit.

3. The permittee shall submit annual reports that specify the PE rate, the CO, NOx and OC emissions for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

V. Testing Requirements (continued)

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

1.b Emission Limitation: 41.2 lbs/hr PE from the caustic scrubber (DA-402) stack egress.

Applicable Compliance Method(s): To determine the worst case emissions rate, the following equation may be used:

E_DA402(PE) = Conc_PE x Q x 1 lb PE/7,000 grains PE
x [528/(460 + T) x (1 - H2O)] x 60 min/hr.
where:
E_DA402(PE) = PE rate from the caustic scrubber, in pounds per hour.

Conc_PE = maximum PE concentration in scrubber exhaust, which is 0.03 grain PE/dscf, per engineering estimates noted in the application for PTI 02-16459.

Q = scrubber exhaust flow rate, which is approximately 1,270 acfm as noted in the application for PTI 02-16459.

T = actual temperature of scrubber exhaust, which is approximately 68 degrees Fahrenheit.

H20 = moisture content of scrubber exhaust, which is approximately 0.25.

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

1.c Emission Limitations: 0.020 lb PE/mmBtu from each egress for the TiCl4 vaporizer (BA-812), the O2 preheater (BA-815), and the O2 preheater (BA-816).

Applicable Compliance Method(s): To determine the worst case emissions rate, the following equation may be used:

E(PE) = EF/HC

where:
E_BA812(PE) = the PE rate from the TiCl4 vaporizer (BA-812), in pounds PE per million Btu of maximum heat input.

E_BA815(PE) = the PE rate from the O2 preheater (BA-815) , in pounds PE per million Btu of maximum heat input.

E_BA816(PE) = the PE rate from the O2 preheater (BA-816) , in pounds PE per million Btu of maximum heat input.

EF = the emission factor for the PE rate, 1.9 pounds of filterable particulate emissions per million cubic feet of natural gas employed, specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

HC = maximum heat content of natural gas, which is 1,029 Btu per cubic foot as specified in the application for PTI 02-16459.

If required, the permittee shall demonstrate compliance with these emission limitations through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

V. Testing Requirements (continued)

1.d Emission Limitation: 183.5 TPY PE from all egress points.

Applicable Compliance Method: To determine the annual rate, the following equation may be used:

PE_TOTAL = [E_DA402(PE) + (E_BA812(PE) x mmBtu_BA812/hr)
+ (E_BA815(PE) x mmBtu_BA815/hr) + (E_BA816(PE)
x mmBtu_BA816/hr)] x HRS/YR x 1 ton/2000 lbs.

where:
PE_TOTAL = the total PE rate from all egress points, in tons/year.

mmBtu_BA812/hr = the maximum rated heat input capacity of the TiCl4 vaporizer (BA-812), 16.8 mmBtu/hr.

mmBtu_BA815/hr = the maximum rated heat input capacity of the O2 preheater (BA-815), 9.5 mmBtu/hr.

mmBtu_BA816/hr = the maximum rated heat input capacity of the O2 preheater (BA-816), 2.2 mmBtu/hr.

HRS/YR = the actual hours of operation per year, which is the sum of the daily operating hours, as specified in the record keeping requirements of section A.III.2, for the calendar year.

1.e Emission Limitations: 0.67 lb CO/hr from the TiCl4 vaporizer (BA-812) egress, 0.46 lb CO/hr from the O2 preheater (BA-815) egress, and 0.18 lb CO/hr from the O2 preheater (BA-816) egress.

3.86 lbs NOx/hr from the TiCl4 vaporizer (BA-812) egress, 2.13 lbs NOx/hr from the O2 preheater (BA-815) egress, and 0.21 lb NOx/hr from the O2 preheater (BA-816) egress.

0.18 lb OC/hr from the TiCl4 vaporizer (BA-812) egress, 0.10 lb OC/hr from the O2 preheater (BA-815) egress, and 0.02 lb OC/hr from the O2 preheater (BA-816) egress.

Applicable Compliance Method(s): To determine the worst case emissions rate, the following equation may be used:

E(lbs/hr) = EF x mmBtu/hr x cf/1029 Btu.

where:
E(lbs/hr) = the rate of CO, NOx or OC emissions, in pounds/hour.

EF_BA812(CO) = the CO emissions factor for BA-812, 41.16 pounds of CO emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459.

EF_BA815(CO) = the CO emissions factor for BA-815, 49.7 pounds of CO emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459.

EF_BA816(CO) = the CO emissions factor for BA-816, 84 pounds of CO emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-1, Chapter 1.4 (7/98).

EF_BA812(NOx) = the NOx emissions factor for BA-812, 236.67 pounds of NOx emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459.

EF_BA815(NOx) = the NOx emissions factor for BA-815, 230.50 pounds of NOx emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459.

V. Testing Requirements (continued)

1.f EF_BA816(NOx) = the NOx emissions factor for BA-816, 100 pounds of NOx emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-1, Chapter 1.4 (7/98).

EF_BA812(OC) = EF_BA815(OC) = EF_BA816(CO) = the OC emissions factor, 11 pounds of OC emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

1.g Emission Limitations: 5.74 TPY CO, 27.18 TPY NOX and 1.33 TPY OC emissions from all egress points.

Applicable Compliance Method: To determine the annual rate, the following equation may be used:

E(TPY) = (E_BA812 + E_BA815 + E_BA816) x HRS/YR x 1 ton/2,000 lbs.

where:
E(TPY) = the rate of CO, NOx or OC emissions, in tons/year.

E_BA812 = the CO, NOx or OC emissions rate from the TiCl4 vaporizer (BA-812), in pound(s) per hour, as specified in section A.V.1.e. and section A.V.1.f.

E_BA815 = the CO, NOx or OC emissions rate from the O2 preheater (BA-815), in pound(s) per hour, as specified in section A.V.1.e.

E_BA816 = the CO, NOx or OC emissions rate from the O2 preheater (BA-816), in pound(s) per hour, as specified in section A.V.1.e. and section A.V.1.f.

If required, the permittee shall demonstrate compliance with these emission limitations through emission tests performed in accordance with U.S. EPA Methods 1-4 and 10 for CO emissions, U.S. EPA Methods 1-4 and 7E for NOX emissions, and U.S. EPA Methods 1-4 and 18, 25 or 25A, as appropriate for OC emissions as found in 40 CFR Part 60, Appendix A. Equivalent, alternative methods (as approved by Ohio EPA) may be performed.

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
Oxidation process: including an aluminum chloride generator (DC-813), an oxidation reactor (DC-827) with a paire filter (FD-822) product capture device, a slurry tank (FA-813), a neutralization tank (FA-601), and a packed column, caustic scrubber (DA-402) with a venturi inlet and mist eliminator		

2. Additional Terms and Conditions

2.a Modeling to demonstrate compliance with Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound and criteria pollutant will be less than 1.0 ton and less than the significant level for modeling. 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 threshold limit value (TLV) to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit-to-install.

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: TiCl4 Production Unit (P002)

Activity Description: Chlorination, condensation, purification,

NOTE: Several peices of process equipment are associated with the permit ID number P002 (equipment that is vented to the main process stack CB-703 are

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
Chlorination process: including three chlorinators (DC-701-7, DC-701-8 and DC-701-9), three cyclones (FC-702, FC-704 and FC-709) and six condensers (DA-722 A/B, DA-723 A/B and DA-724 A/B) with a venturi scrubber (PA-735), a spray tower (DA-435), a venturi scrubber (PA-736), a demister (DA-736) and a packed column scrubber (DA-780) with a mist eliminator that are used to control normal production emissions via CB-703 egress; In addition a scrubber spray tower (DA-735), a venturi scrubber (PA-770), a demister (DA-770) and a demister (FG-770B) are used to control emissions during normal and maintenance operations via CB-703 egress; and a venturi scrubber (PA-404) and a cyclone separator (FC-404) are used to control emissions during cold startup operations via CB-404 egress.	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from any stack egress shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-11	The total PE rate shall not exceed 46.8 lbs/hr. See section A.I.2.a.
	OAC rule 3745-18-06(D)(2)	Sulfur dioxide (SO2) emissions shall not exceed 484 lbs/hr.
	OAC rule 3745-21-08(B)	See section A.I.2.b.
	OAC rule 3745-23-06(B)	See section A.I.2.b.

Operations, Property, and/or Equipment	Applicable Rules/ Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3) PTI 02-691 PTI 02-1545	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07, 3745-17-11, 3745-18-06(D)(2), 3745-21-08(B) and 3745-23-06(B).

2. Additional Terms and Conditions

2.a The allowable, hourly PE rate is based on Table 1 in OAC rule 3745-17-11. The uncontrolled mass rate of emissions, which is used to determine the allowable PE rate using curve P-1 within Figure II in OAC rule 3745-17-11, cannot be accurately ascertained.

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-691 and in PTI 02-1545.

II. Operational Restrictions

1. The water flow rate of venturi scrubber PA-736 shall be maintained at a value of not less than 5 gallons per minute at all times while the emissions unit is in normal operation.

2. The water flow rate of venturi scrubber PA-770 shall be maintained at a value of not less than 5 gallons per minute at all times while any part of the emissions unit is in normal and/or maintenance operation(s).

3. The water flow rate of venturi scrubber (PA-404) shall be maintained at a value of not less than 5 gallons per minute at all times while any chlorinator reactor bed is in cold startup operation.

III. Monitoring and/or Record Keeping Requirements

1. The permittee shall operate and maintain existing equipment to continuously monitor and record the chlorine concentration in parts per million via the CB-703 egress.

2. The permittee shall maintain records of all data obtained by the continuous chlorine monitoring system including, but not limited to, parts per million chlorine on an instantaneous basis, and results of daily zero/span calibration checks.

3. The permittee shall implement a Standard Operating Procedure to respond to excessive levels of chlorine concentrations (1000 ppm) as determined by the continuous monitor. The duration of such an excessive release shall be controlled such that the quantity released is less than 10 lbs. Such a procedure shall include acknowledgement of an alarm condition by operating personnel, the cause of the alarm, and corrective action taken.

4. The permittee shall properly install by the effective date of this permit, and thereafter properly operate and maintain equipment to continuously monitor the scrubber water flow rate of venturi scrubber PA-736, venturi scrubber PA-770, and venturi scrubber PA-404 while any part of the emissions unit is in normal production, maintenance, or cold startup. 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 for each scrubber the following information each day:

a. The scrubber water flow rate, in gallons per minute, on a once/12-hour basis.

b. The operating times for the capture (collection) system, control devices, monitoring equipment, and the associated emissions unit.

IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during production when the scrubber water flow rate for venturi scrubber PA-736 was not maintained at or above the level specified in section A.II.1.

2. The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during maintenance when the scrubber water flow rate for venturi scrubber PA-770 was not maintained at or above the level specified in section A.II.2.

3. The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during cold startup when the scrubber water flow rate for venturi scrubber PA-404 was not maintained at or above the level specified in section A.II.3.

4. The permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Northeast District Office. These reports shall contain the date, commencement and completion times, and duration of each instance where the chlorine concentrations were in excess of 1000 ppm, except during calibration spans, and the corrective actions taken (if any). These reports shall also contain the total chlorine emissions for each incident (in pounds).

5. Within thirty (30) days following the end of each calendar quarter, the permittee shall submit reports to the Northeast District Office reports of the continuous chlorine monitoring system downtime, except during calibration spans, while the emissions unit was on-line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of process and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall be included in the quarterly report.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1), if required by Ohio EPA.

1.b Emission Limitation: 46.8 lbs/hr PE.

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

1.c Emission Limitation: 484 lbs/hr SO2.

Applicable Compliance Method(s): The measured SO2 emissions rate during normal production at CB-703 egress point was determined to be 7.60 lbs/hr via a U.S. EPA Method 6C test conducted on August 5 & 6, 1999. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

V. Testing Requirements (continued)

2. Not later than 30 days prior to the proposed observation date(s), the permittee shall submit a notification to the Ohio EPA Northeast District Office that cold startup operations will be conducted at one of the reactors. The permittee shall conduct, or have conducted, visible particulate emission observations of the CB-404 egress point throughout startup operations via U.S. EPA Method 22 by a qualified visible emissions reader(s), who is educated in the general procedures for determining the presence of visible emissions per U.S. EPA Method 22 requirements. The visible particulate emissions observations shall be conducted during the next cold startup after issuance of the permit. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s) 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. If any visible emissions are observed at any time, the permittee shall submit a report that identifies the probable cause of the visible particulate emissions and any corrective actions or preventive measure taken to the Ohio EPA Northeast District Office. This written report shall be submitted within 30 days after conducting the first cold startup operations after issuance of the permit.

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

3.a The emission testing shall be conducted within 6 months after issuance of the permit. Another test shall be conducted within 6 months prior to permit expiration, if the measured emissions rate is greater than or equal to 50 percent of the allowable rate.

3.b The emission testing shall be conducted to demonstrate compliance with the allowable mass rate and the allowable visible opacity rate for particulate emissions.

3.c The following test method(s) shall be employed to demonstrate compliance with the allowable mass rate for particulate emissions: Method 5 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

3.d The following test method(s) shall be employed to demonstrate compliance with the allowable visible opacity rate for particulate emissions: Method 9 of 40 CFR Part 60, Appendix A.

3.e 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 Ohio EPA Northeast District Office. The emission tests shall be performed at the CB-703 egress point during normal production at the maximum capacity of two chlorinators.

3.f Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. 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 Ohio EPA Northeast District Offices refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office 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 Ohio EPA Northeast District Office 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 Ohio EPA Northeast District Office.

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: Ore and Coke Recovery (P011)

Activity Description: Ore and Coke Recovery Process includes many pieces of process equipment.

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
Recovery of ore and coke system: belt wash, belt filter, 6.0 mmBtu/hr natural gas-fired dryer and storage silo with a bin vent dust collector (FG-332), venturi scrubber (PA-330) and absorber/separator (DA-330) to control particulate emissions	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from this emissions unit shall not exceed 20% opacity as a 6-minute average. See section A.I.2.a.
	OAC rule 3745-17-11(A)	Particulate emissions (PE) shall not exceed 31.5 lbs/hr. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.b.
	OAC rule 3745-23-06(B)	See section A.I.2.b.
	OAC rule 3745-31-05(A)(3) PTI 02-08387	The visible particulate emissions (PE) shall be limited to a 10% opacity, as a 6-minute average. The PE rate shall not exceed 0.99 lb/hr and 4.34 tons/year. See section A.I.2.c. The carbon monoxide (CO) emissions shall not exceed 2.30 lbs/hr and 10.1 tons/year. The nitrogen oxides (NOx) emissions shall not exceed 0.82 lb/hr and 3.59 tons/year. The requirements of this rule also include compliance with the requirements of OAC rules 3745-21-08(B) and 3745-23-06(B).

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions (continued)

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-08387.

2.c All PE from this emissions unit shall be vented to the control equipment.

II. Operational Restrictions

None

III. Monitoring and/or Record Keeping Requirements

1. 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 bin vent dust collector (FG-332) egress and the absorber/separator (DA-330) egress points. 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. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. whether the visible emissions during the observation period were continuous or intermittent; and

e. any corrective actions taken to eliminate the visible emissions.

2. The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

3. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following monitoring and record keeping requirements are as stringent as or more stringent than the monitoring and record keeping requirements contained in Permit to Install 02-08387, issued on May 16, 2002: A.III.1. and A.III.2. The monitoring and record keeping requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping requirements in the Permit to Install.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the bin vent dust collector (FG-332) egress or the absorber/separator (DA-330) egress; and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following reporting requirement is as stringent as or more stringent than the reporting requirements contained in Permit to Install 02-08387, issued on May 16, 2002: A.IV.1. The reporting requirements contained in the above-referenced Permit to Install are subsumed into the reporting requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirements in the Permit to Install.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

V. Testing Requirements (continued)

1.a Emission Limitation: 10% opacity of visible particulate emissions (PE), as a six-minute average.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1), if required by Ohio EPA.

1.b Emission Limitation: 0.99 lb/hr PE from all egress points.

Applicable Compliance Method(s): Compliance may be based upon the following methods:

i. Determination of the PE rate from the bin vent dust collector (FG-332) may be based on the following calculation:

PE (FG-332) = Q x PEconc. x 1 lb PE/7000 grains PE x 60 min/hr.

Where the following applies:

PE (FG-332) = the PE rate from the bin vent dust collector (FG-332), in lbs/hr.

Q = maximum exhaust rate, which is 1550 dscf/min from the manufacturer specifications.

PEconc. = the particulate concentration in the exhaust, which is 0.015 grain PE/dscf per manufacturer specifications.

ii. The measured PE rate, PE(DA-330), from the absorber/separator (DA-330) egress was determined to be 0.68 lb/hr via U.S. EPA Methods 1-5 tests conducted on February 23, 2000. The measured PE rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required.

iii. Determination of total PE rate:
E(T) = E(FG-332) + E(DA-330).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-5 or equivalent, alternative method(s) (as approved by Ohio EPA).

1.c Emission Limitation: 3.95 TPY PE.

Applicable Compliance Method: To determine the annual rate for PE, the actual, hourly, emission rate as determined in section A.V.1.b. shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in section A.III.2., and divided by 2000 lbs/ton.

1.d Emission Limitation: 2.30 lbs/hr CO from the absorber/separator (DA-330) egress.

Applicable Compliance Method: The measured CO rate from the absorber/separator (DA-330) egress was determined to be 1.83 lbs/hr via U.S. EPA Methods 1-4 and U.S. EPA Method 10 tests conducted on February 21, 2002. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and U.S. EPA Method 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

V. Testing Requirements (continued)

1.e Emission Limitation: 10.1 TPY CO.

Applicable Compliance Method: To determine the annual rate for CO, the actual, hourly, emission rate as determined in section A.V.1.d. shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in section A.III.2., and divided by 2000 lbs/ton.

1.f Emission Limitation: 0.82 lb/hr NOx from the absorber/separator (DA-330) egress.

Applicable Compliance Method: The measured NOx rate from the absorber/separator (DA-330) egress was determined to be 0.73 lb/hr via U.S. EPA Methods 1-4 and U.S. EPA Method 7E tests conducted on February 21, 2002. The measured NOx emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required. If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and U.S. EPA Method 7E or equivalent, alternative method(s) (as approved by Ohio EPA).

1.g Emission Limitation: 3.59 TPY NOx

Applicable Compliance Method: To determine the annual rate for NOx, the actual, hourly, emission rate as determined in section A.V.1.f. shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in section A.III.2., and divided 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
Recovery of ore and coke system: belt wash, belt filter, 6.0 mmBtu/hr natural gas-fired dryer and storage silo with a bin vent dust collector (FG-332), venturi scrubber (PA-330) and absorber/separator (DA-330) to control particulate emissions		

2. Additional Terms and Conditions

2.a Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because air toxic compounds were below the Ohio modeling significant emission rates. 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 above the Ohio modeling significant emission rate may require the permittee to apply for and obtain a new permit to install.

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 #1 - TiO2 Unit (P012)

Activity Description: Spray dryer #1 (FF-919), Spray Dryer Feed Tank (FE-917) and Natural Gas Burner (BA-918)

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
TiO2 paste feed tank (FE-917), No. 1 TiO2 paste dryer (FF-919) and 21 mmBtu/hr natural gas fired burner (BA-918) with two baghouses (FD-921A & FD-921B)	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from this emissions unit shall not exceed 20% opacity as a 6-minute average.
	OAC rule 3745-17-11	Particulate emissions (PE) shall not exceed 23.9 lbs/hr. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.b.
	OAC rule 3745-31-05(A)(3) PTI 02-14024	The PE rate shall not exceed 4.0 lbs/hr and 17.5 TPY. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B).
	OAC rule 3745-23-06(B)	See section A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-14024.

II. Operational Restrictions

1. The permittee shall burn only natural gas in the No.1 TiO2 paste dryer burner (BA-918).

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 the No. 1 TiO2 paste dryer burner (BA-918).

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

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 stack 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. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. whether the visible emissions during the observation period were continuous or intermittent; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

4. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following monitoring and record keeping requirements are as stringent as or more stringent than the monitoring and record keeping requirements contained in Permit to Install 02-14024, issued on February 20, 2001: A.III.1. through A.III.3. The monitoring and record keeping requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping requirements of this operating permit, so that compliance with these requirements constitutes ompliance with the underlying monitoring and record keeping requirements in the Permit to Install.

IV. Reporting Requirements

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

2. The permittee shall submit deviation (excursion) reports that include an identification of each day when a fuel other than natural gas was burned in the No.1 TiO2 paste dryer burner (BA-918). Each report shall be submitted within 30 days after the deviation occurs.

3. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following reporting requirements are as stringent as or more stringent than the reporting requirements contained in Permit to Install 02-14024, issued on February 20, 2001: A.IV.1. and A.IV.2. The reporting requirements contained in the above-referenced Permit to Install are subsumed into the reporting requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirements in the Permit to Install.

V. Testing Requirements

1. Compliance with the allowable emissions limitations in section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

1.b Emission Limitation: 4.0 lbs PE/hr.

Applicable Compliance Method: To determine the actual worst case emission rate for PE, the following equation may be used:

E_PE = summation of [Qds x (PE_grain load) x (1 lb PE/7000 grains PE) x (60 min/hr)].

Where the following applies:

E_PE = PE rate, in pounds per hour.

Qds = dry, standard actual exhaust flow from final egress point (CB-925) of 15,574 dry standard cubic feet per minute (dcfm), from the stack test conducted on July 29, 1999.

PE grain loading = maximum particulate loading from the baghouses of 0.0025 grain PE/dscf, from the stack test conducted on July 29, 1999.

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

1.c Emission Limitation: 17.5 TPY PE.

Applicable Compliance Method: To determine the annual rate for PE, the actual, hourly, worst case emission rate as determined in section A.V.1.b. shall be multiplied by the actual hours of operation for the calendar year, which is the sum of the daily operating hours required in the record keeping in section A.III.3., and divided by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Emissions unit P012 was previously associated with emissions unit P901 titanium dioxide finishing operations.

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
TiO2 paste feed tank (FE-917), No. 1 TiO2 paste dryer (FF-919) and 21 mmBtu/hr natural gas fired burner (BA-918) with two baghouses (FD-921A & FD-921B)		

2. Additional Terms and Conditions

2.a Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions increase for each toxic compound and each criteria pollutant will be less than 1.0 ton and less than the "Ohio Modeling Significant Emission Rate", respectively, as noted in Table 3 of Division of Air Pollution Control Engineering Guide #69. 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 or would cause emissions of any criteria pollutant above the "Ohio Modeling Significant Emission Rate" may require the permittee to apply for and obtain a new permit to install.

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 #2 - TiO2 Unit (P013)

Activity Description: Spray Dryer #2 (FF-946), Spray Dryer Feed Tank (FE-614) and Natural Gas Burner (BA-946)

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
TiO2 paste feed tank (FA-614), No. 2 TiO2 paste dryer (FF-946) and 37 mmBtu/hr natural gas fired burner (BA-946) with baghouse (FD-946)	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from this emissions unit shall not exceed 20% opacity as a 6-minute average.
	OAC rule 3745-17-11	Particulate emissions (PE) shall not exceed 23.9 lbs/hr. See section A.I.2.a.
	OAC rule 3745-21-08(B)	See section A.I.2.b.
	OAC rule 3745-31-05(A)(3) PTI 02-14024	The PE rate shall not exceed 2.24 lbs/hr and 9.81 TPY. Carbon monoxide (CO) emissions shall not exceed 6.78 lbs/hr and 29.7 tons/yr. Nitrogen oxides (NOx) emissions shall not exceed 4.40 lbs/hr and 19.3 tons/yr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08(B) and 3745-23-06(B).
	OAC rule 3745-23-06(B)	See section A.I.2.b.

2. Additional Terms and Conditions

2.a The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2.b The permittee has satisfied the "best available control techniques and operating practices" and "latest available control techniques and operating practices" required pursuant to OAC rules 3745-21-08 and 3745-23-06, respectively, by committing to comply with the best available technology requirements established in PTI 02-14024.

II. Operational Restrictions

1. The permittee shall burn only natural gas in the No.2 TiO2 paste dryer burner (BA-946).

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 the No. 2 TiO2 paste dryer burner (BA-946).

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

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 stack 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. whether the emissions are representative of normal operations;
c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
d. whether the visible emissions during the observation period were continuous or intermittent; and
e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

3. The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

4. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following monitoring and record keeping requirements are as stringent as or more stringent than the monitoring and record keeping requirements contained in Permit to Install 02-14024, issued on February 20, 2001: A.III.1. through A.III.3. The monitoring and record keeping requirements contained in the above-referenced Permit to Install are subsumed into the monitoring and record keeping requirements of this operating permit, so that compliance with these requirements constitutes ompliance with the underlying monitoring and record keeping requirements in the Permit to Install.

IV. Reporting Requirements

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

2. The permittee shall submit deviation (excursion) reports that include an identification of each day when a fuel other than natural gas was burned in the No.1 TiO2 paste dryer burner (BA-946). Each report shall be submitted within 30 days after the deviation occurs.

3. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following reporting requirements are as stringent as or more stringent than the reporting requirements contained in Permit to Install 02-14024, issued on February 20, 2001: A.IV.1. and A.IV.2. The reporting requirements contained in the above-referenced Permit to Install are subsumed into the reporting requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirements in the Permit to Install.

V. Testing Requirements

1. Compliance with the allowable emissions limitations in section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1).

V. Testing Requirements (continued)

1.b Emission Limitation: 2.24 lbs PE/hr.

Applicable Compliance Method: To determine the actual worst case emission rate for PE, the following equation may be used:

E_PE = summation of [Qa x 528/(Ta + 459.67) x (1-M/100) x (PE_grain load) x (1 lb PE/7000 grains PE) x (60 min/hr)].

Where the following applies:

E_PE = PE rate, in pounds per hour.

Qa = actual exhaust flow from final egress point (CB-945) of 45,000 actual cubic feet per minute (acfm) is maximum design flow as noted in the permit application.

Ta = actual exhaust gas temperature, 300 degrees Fahrenheit, from engineering estimates in the permit application.

M = moisture content of exhaust flow, 24 percent by volume, from engineering estimates in the permit application.

PE grain loading = maximum particulate loading from the dust control device, 0.01 grain PE/dscf, from the baghouse manufacturer specifications as noted in the permit application.

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

1.c Emission Limitation: 9.81 TPY PE

Applicable Compliance Method: To determine the annual rate for PE, the actual, hourly, worst case emission rate as determined in section A.V.1.b. shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in section A.III.3., and divided by 2000 lbs/ton.

1.d Emission Limitation: 6.78 lbs/hr CO

Applicable Compliance Method: To determine the actual, hourly worst case CO emission rate the following equation may be used:

E_CO = Q x CO x 1ppm/1,000,000 parts x 28 gram CO/mole CO x 1 lb CO/453.59 gram CO x 60 min/hr.

Where the following applies:

E_CO = CO emissions, in pounds per hour.

Q = exhaust flow , which is 23760 dscf/min, as noted in the application for PTI 02-14024.

CO = CO concentration in exhaust flow, which is 70 ppm, based upon manufacturer specifications.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

1.e Emission Limitation: 29.7 TPY CO

Applicable Compliance Method: To determine the actual, annual CO emissions, the worst case hourly rate, E_CO, as determined from the equation as noted in section A.V.1.d., is multiplied by the actual hours of operation for the calendar year, required in the record keeping specified in section A.III.3., and divided by 2000 lbs/ton.

1.f Emission Limitation: 4.40 lbs/hr NOx

Applicable Compliance Method: To determine the actual, hourly worst case NOx emission rate the following equation may be used:

E_NOx = Btu/hr x EF.

E_NOx = NOx emissions, in pounds per hour.

Btu/hr = maximum, hourly heat input, which is 37 mmBtu, based on manufacturer's specification.

EF = NOx emission factor, which is 0.108 lb NOx/mmBtu of actual heat input, based upon manufacturer's specification.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

V. Testing Requirements (continued)

1.g Emission Limitation: 19.3 TPY NOX

Applicable Compliance Method: To determine the actual, annual NOx emissions, the worst case hourly rate, E_NOx , as determined from the equation as noted in section A.V.1.f., is multiplied by the actual hours of operation for the calendar year, required in the record keeping specified in section A.III.3., and divided by 2000 lbs/ton.

VI. Miscellaneous Requirements

1. Emissions unit P013 was previously associated with emissions unit P901 titanium dioxide finishing operations.

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
TiO2 paste feed tank (FA-614), No. 2 TiO2 paste dryer (FF-946) and 37 mmBtu/hr natural gas fired burner (BA-946) with baghouse (FD-946)		

2. Additional Terms and Conditions

2.a Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions increase for each toxic compound and each criteria pollutant will be less than 1.0 ton and less than the "Ohio Modeling Significant Emission Rate", respectively, as noted in Table 3 of Division of Air Pollution Control Engineering Guide #69. 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 or would cause emissions of any criteria pollutant above the "Ohio Modeling Significant Emission Rate" may require the permittee to apply for and obtain a new permit to install.

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: Coke & Ore Unloading, Storage and Handling - TiCl4 Unit (P903)

Activity Description: Ore and coke loading hopper (FE-208), ore and coke conveyors/bucket elevator (JD-200 through 204), Ore and Coke Blowpot conveying system, Storage Silos,

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
Ore & coke unloading, storage and handling operations: including coke/ore unloading hopper (FE-208) and coke/ore conveyors & bucket elevators, all of which have fugitive egress points	OAC rule 3745-17-07(B)(1)	Visible particulate emissions (PE) from any fugitive egress shall not exceed 20% opacity as a 3-minute average.
	OAC rule 3745-17-08(B)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed. See sections A.I.2.a. through A.I.2.d.
Storage silos (FE-201-1, FE-201-2, FE-201-3 & FE-201-4) with baghouse FG-701A, and storage silo FE-202 with baghouse FG-701B, all of which have stack egress points	OAC rule 3745-17-07(A)(1)	Visible PE from any stack egress shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
	OAC rule 3745-17-11	The PE rate shall not exceed 6.2 lbs/hr.

2. Additional Terms and Conditions

2.a The material handling operation(s) that are covered by this permit and subject to the requirements of OAC rules 3745-17-07 and 3745-17-08 are listed below:

rail car bottom dumping
truck dumping
under-pile gravity load-out (FE-208) to conveyor (JD-201)
belt conveyors (JD-201, JD-202, JD-204 and JD-200)
pneumatic equipment (FE-713, FE-715, FE-716A/B, FE-714, FE-712, FE-718 and FE-711)
bucket elevator conveyor (JD-203)

2. Additional Terms and Conditions (continued)

2.b The permittee shall employ reasonably available control measures for the above-identified material handling operation(s) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:

material handling operation(s) - control measure(s)

rail car bottom dumping and truck dumping - partial enclosure

under-pile gravity load-out to conveyor (FE-208), bucket elevator conveyor (JD-201) - total enclosure

belt conveyors (JD-201, JD-202, JD-204 and JD-200) - total enclosure

pneumatic equipment (FE-713, FE-715, FE-716A/B, FE-714, FE-712, FE-718 and FE-711) - total enclosure

bucket elevator conveyor (JD-203) - total enclosure

storage silos (FE-201-1, FE-201-2, FE-201-3 and FE-201-4) - directing displaced exhaust gases to baghouse FG-701A

storage silo (FE-202) - directing displaced exhaust gases to baghouse FG-701B

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.c The above-identified control measures shall be implemented at all times to ensure compliance with the above-mentioned control requirements and visible emission limitations.

2.d Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.

II. Operational Restrictions

1. The permittee shall employ baghouse FG-701A whenever material is transferred to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4.

2. The permittee shall employ baghouse FG-701B whenever material is transferred to storage silo FE-202.

III. Monitoring and/or Record Keeping Requirements

1. 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 FG-701A stack egress, the baghouse FG-701B stack egress, and for any visible fugitive particulate emissions from the rail car bottom dumping and truck dumping area associated with 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. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. whether the visible emissions during the observation period were continuous or intermittent; and

e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

2. The permittee shall maintain daily records that document any time periods when baghouse FG-701A was not in service when material was transferred to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4.

3. The permittee shall maintain daily records that document any time periods when baghouse FG-701B was not in service when material was transfered to storage silo FE-202.

4. The permittee may, upon receipt of written approval from the Ohio EPA Northeast District Office, modify the above-mentioned frequencies for performing the visible emissions checks if operating experience indicates that less frequent visible emissions checks would be sufficient to ensure compliance with the above-mentioned applicable requirements.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse FG-701A stack egress and the baghouse FG-701B stack egress serving this emissions unit, (b) identify all days during which any visible fugitive particulate emissions were observed from the rail car bottom dumping and truck dumping area serving this emissions unit, and (c) describe any corrective actions taken to minimize or eliminate the visible particulate emissions and/or visible fugitive particulate emissions. These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

IV. Reporting Requirements (continued)

2. The permittee shall notify the Northeast District Office in writing of any daily record showing that any of the following control equipment was not in service:

a. baghouse FG-701A when material was transfered to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4.

b. FG-701B when material was transfered to storage silo FE-202.

The notification shall include a copy of such record and shall be sent to the Northeast District Office within 30 days after the event occurs.

V. Testing Requirements

1. Compliance with the emissions limitation(s) in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods(s):

1.a Emission Limitation: 20% opacity of visible particulate emissions.

Applicable Compliance Method: Compliance shall be determined based upon OAC rule 3745-17-03(B)(1), if required by Ohio EPA.

V. Testing Requirements (continued)

1.b Emission Limitation: 6.2 lbs/hr PE from all egress points.

Applicable Compliance Method(s): Compliance may be based upon the following equations:

i. Determination of the worst case PE rate from the coke/ore unloading hopper:

E(UL) = [(EF_coke x PR_coke) +(EF_ore x PR_ore)] x (1 - CE).

where:
E(UL) = maximum PE rate from coke and ore unloading operations, in pounds per hour.

EF_coke = emissions factor for PE, which is 0.027 lb PE/ton coke as specified in AP-42, Table 11.9-4, chapter 11.9 (7/98).

EF_ore = emissions factor for PE, which is 0.12 lb PE/ton ore as specified in AP-42, Table 11.24-2, chapter 11.24 (8/82).

PR_coke = maximum coke process rate, which is 60 tons coke/hr.

PR_ore = maximum ore process rate, which is 60 tons ore/hr.

CE = control efficiency of partial enclosure, may be 80% for an enclosure at a load-in operation, Table 2.1.2-8, Reasonably Available Control Measures for Fugitive Dust Sources, Ohio EPA, September, 1980, page 2-47.

ii. Determination of the worst case PE rate from the coke and ore storage silos:
E(S) = [(Conc_PEa x Qa) + (Conc_PEb x Qb)] x 1 lb PE/7000 grains PE x 60 min/hr.

where:
E(S) = the PE rate from the storage silos, in pounds per hour.

Conc_PEa = Conc_PEb = maximum concentration of PE in baghouse FG-701A exhaust and in baghouse FG-701B, which are 0.03 grains PE/dscf, per engineering estimates noted in the potential to emit analysis, Plant2EI.xls.

Qa = Qb = exhaust flow rate of baghouse FG-701A and of baghouse FG-701B, which is 600 dscfm as noted in Millennium's memo of June 21, 2000.

iii. Determination of total PE rate:
E(T) = E(UL) + E(S).

where:
E(T) = the total PE rate.

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

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

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