



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

01/21/04

**CERTIFIED MAIL**

**RE: Final Title V Chapter 3745-77 permit**

02-04-01-0200  
Millennium Inorganic Chemicals, Inc. Plant #I  
Dianna L. Henslee  
2900 Middle Road  
Ashtabula, OH 44004

Dear Dianna L. Henslee:

Enclosed is the Title V permit that allows you to operate the facility in the manner indicated in the permit. Because this permit may contain several conditions and restrictions, we urge you to read it carefully.

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. It is also requested by the Director that a copy of the appeal be served upon the Environmental Enforcement Section of the Office of the Attorney General. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
309 South Fourth Street, Room 222  
Columbus, Ohio 43215

If you have any questions, please contact Northeast District Office.

Sincerely,

Michael W. Ahern  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

cc: Northeast District Office  
File, DAPC PMU



State of Ohio Environmental Protection Agency

**FINAL TITLE V PERMIT**

Issue Date: **01/21/04**

Effective Date: **02/11/04**

Expiration Date: **02/11/09**

This document constitutes issuance of a Title V permit for Facility ID: 02-04-01-0200 to:  
Millennium Inorganic Chemicals, Inc. Plant #I  
2900 Middle Road  
Ashtabula, OH 44004

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

B001 (Boiler #1) natural gas or fuel oil fired boiler (BLR-4012).	P001 (Chlorination A Process ) TiCl4 production process A.	P009 (Dryer ) dryer for the ore and coke recovery system (P009).
B002 (Boiler #2) natural gas or fuel oil fired boiler (BLR-4014).	P002 (Spray Dryer A) TiO2 spray dryer A (DRY-2505).	P011 (Oxygen Preheater and TiCl4 Vaporizer Train A) Natural gas fired oxygen preheater A (HTR-1902) and natural gas fired TiCl4 Vaporizer A (VAP-1901).
B005 (Boiler #3) natural gas fired, low NOx burner, FGR, IFGR boiler (BLR-4030).	P006 (Chlorination B Process) TiCl4 production process B.	P901 (Coke and Ore Unloading, Storage, and Handling) Coke and ore storage and feed system (P901).
F001 (Roadways and Parking Lots) Paved and unpaved roadways and parking lots	P007 (Spray Dryer B) TiO2 spray dryer B (DRY-7510).	

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, i.e., in Section A.III of Part III of this Title V permit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

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

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

*(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))*

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

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

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

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

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

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

*(Authority for term: OAC rule 3745-77-07(A)(3)(c))*

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

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

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

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

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

See B.6 below if no deviations occurred during the quarter.

*(Authority for term: OAC rule 3745-77-07(A)(3)(c))*

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

Written reports that identify all other deviations of the federally enforceable requirements contained in this permit, including the monitoring, record keeping, and reporting requirements, which are not reported in accordance with General Term and Condition A.1.c.ii above shall be

submitted to the appropriate Ohio EPA District Office or local air agency by January 31 and July 31 of each year; and each report shall cover the previous six calendar months.

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

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

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.

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

- iv. Each written report shall be signed by a responsible official certifying that, "based on information and belief formed after reasonable inquiry, the statements and information in the report (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete."  
*(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))*
- v. Reports of any required monitoring and/or record keeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.  
*(Authority for term: OAC rule 3745-77-07(A)(3)(c))*

## 2. Scheduled Maintenance

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

*(Authority for term: OAC rule 3745-77-07(A)(3)(c))*

## 3. Risk Management Plans

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

- a. a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or
- b. as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

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

## 4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

*(Authority for term: OAC rule 3745-77-07(A)(5))*

**5. Severability Clause**

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

*(Authority for term: OAC rule 3745-77-07(A)(6))*

**6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.10 below. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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

**7. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78.

*(Authority for term: OAC rule 3745-77-07(A)(8))*

**8. Marketable Permit Programs**

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.

*(Authority for term: OAC rule 3745-77-07(A)(9))*

**9. Reasonably Anticipated Operating Scenarios**

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these general terms and conditions shall apply to all operating scenarios authorized in this permit.

*(Authority for term: OAC rule 3745-77-07(A)(10))*

**10. Reopening for Cause**

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

- a. Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.
- b. This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.
- c. The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.
- d. The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

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

**11. Federal and State Enforceability**

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

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

**12. Compliance Requirements**

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with paragraph (E) of OAC rule 3745-77-03.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.
- d. Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) and the Administrator of the U.S. EPA in the following manner and with the following content:
  - i. Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.
  - ii. Compliance certifications shall include the following:
    - (a) An identification of each term or condition of this permit that is the basis of the certification.
    - (b) The permittee's current compliance status.
    - (c) Whether compliance was continuous or intermittent.
    - (d) The method(s) used for determining the compliance status of the source currently and over the required reporting period.
    - (e) Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.
  - iii. Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

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

### **13. Permit Shield**

- a. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.
- b. This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

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

### **14. Operational Flexibility**

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

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

**15. Emergencies**

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

**16. Off-Permit Changes**

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

- a. The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.
- b. The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA. Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.
- c. The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).
- d. The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.
- e. The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

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

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

**17. Compliance Method Requirements**

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

(This term is provided for informational purposes only.)

**18. Insignificant Activities**

Each insignificant activity that has one or more applicable requirements shall comply with those applicable requirements.

(Authority for term: OAC rule 3745-77-07(A)(1))

**19. Permit to Install Requirement**

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

**20. Air Pollution Nuisance**

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

**21. Permanent Shutdown of an Emissions Unit**

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

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

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

**B. State Only Enforceable Section**

**1. Reporting Requirements Related to Monitoring and Record Keeping Requirements**

The permittee shall submit required reports in the following manner:

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

**2. Records Retention Requirements**

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

**3. Inspections and Information Requests**

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

**4. Scheduled Maintenance/Malfunction Reporting**

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

**5. Permit Transfers**

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

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

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

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

- a. where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in General Term and Condition A.1.c.ii;
- b. where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potentials to emit; and
- c. where the company's responsible official has certified that an emissions unit has been permanently shut down.

## Part II - Specific Facility Terms and Conditions

### A. State and Federally Enforcable Section

#### 1. MACT "HAMMER" REQUIREMENTS

The permittee may be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial Boilers, Institutional/Commercial Boilers and Process Heaters, 40 CFR Part 63, Subpart DDDDD. U.S. EPA failed to promulgate this standard by May 15, 2002, the Maximum Achievable Control Technology (MACT) hammer date. In accordance with 40 CFR Part 63, Subpart B (40 CFR Parts 63.50 through 63.56), the permittee shall submit an application to revise the permit to include equivalent emission limitations as a result of a case-by-case MACT determination. The application shall be submitted in two parts. The deadline to submit the Part I application, as specified in 40 CFR Part 63.53, was May 15, 2002.

**1.a** If the final NESHAP standard is not promulgated by the deadline specified by U.S. EPA, the permittee shall submit the Part II application as specified in 40 CFR Part 63.53. (The promulgation deadline for the Industrial Boilers, Institutional/Commercial Boilers and Process Heaters MACT is February 28, 2004.) The Part II application shall be submitted within 60 days after the deadline to promulgate the respective standard or by May 15, 2003, whichever is later. It must contain the following information, unless otherwise specified by future U.S. EPA regulations:

- i. for a new affected source, the anticipated date of startup of operation;
- ii. the hazardous air pollutants (HAPs) emitted by each affected source in the relevant source category and an estimated total uncontrolled and controlled emission rate for HAPs from the affected source;
- iii. any existing federal, State, or local limitations or requirements applicable to the affected source;
- iv. for each affected emission point or group of affected emission points, an identification of control technology in place;
- v. information relevant to establishing the MACT floor (or MACT emission limitation), and, at the option of the permittee, a recommended MACT floor; and
- vi. any other information reasonably needed by the permitting authority including, at the discretion of the permitting authority, information required pursuant to Subpart A of 40 CFR Part 63.

**1.b** The Part II application for a MACT determination may, but is not required to, contain the following information:

- i. recommended emission limitations for the affected source and support information (the permittee may recommend a specific design, equipment, work practice, or operational standard, or combination thereof, as an emission limitation);
- ii. a description of the control technologies that would be applied to meet the emission limitation, including technical information on the design, operation, size, estimated control efficiency and any other information deemed appropriate by the permitting authority, and identification of the affected sources to which the control technologies must be applied; and
- iii. relevant parameters to be monitored and frequency of monitoring to demonstrate continuous compliance with the MACT emission limitation over the applicable reporting period.

**A. State and Federally Enforcable Section (continued)**

- 1.c** If the NESHAP is promulgated before the Part II application is due for the relevant source category, the permittee may be subject to the rule as an existing major source with a compliance date as specified in the NESHAP. If subject, the permittee shall submit the following notifications:
- i. Unless otherwise specified in the relevant Subpart, within 120 days after promulgation of a 40 CFR Part 63 Subpart to which the source is subject, the permittee shall submit an Initial Notification Report that contains the following information, in accordance with 40 CFR Part 63.9(b)(2):
    - (1) the name and mailing address of the permittee;
    - (2) the physical location of the source if it is different from the mailing address;
    - (3) identification of the relevant MACT standard and the source's compliance date;
    - (4) a brief description of the nature, design, size, and method of operation of the source, and an identification of the types of emission points within the affected source subject to the relevant standard and the types of HAPs emitted; and
    - (5) a statement confirming the facility is a major source for HAPs.
  - ii. Unless otherwise specified in the relevant Subpart, within 60 days following completion of any required compliance demonstration activity specified in the relevant Subpart, the permittee shall submit a notification of compliance status that contains the following information:
    - (1) the methods used to determine compliance;
    - (2) the results of any performance tests, visible emission observations, continuous monitoring systems performance evaluations, and/or other monitoring procedures or methods that were conducted;
    - (3) the methods that will be used for determining continuous compliance, including a description of monitoring and reporting requirements and test methods;
    - (4) the type and quantity of HAPs emitted by the source, reported in units and averaging times in accordance with the test methods specified in the relevant Subpart;
    - (5) an analysis demonstrating whether the affected source is a major source or an area source;
    - (6) a description of the air pollution control equipment or method for each emission point, including each control device or method for each HAP and the control efficiency (percent) for each control device or method; and
    - (7) a statement of whether or not the permittee has complied with the requirements of the relevant Subpart.
- 2.** This facility developed and registered a risk management plan pursuant to section 112(r) of the Act and is required to comply with the requirements of section 112(r) and the regulations adopted thereunder.

**A. State and Federally Enforcable Section (continued)**

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

- B006 - 8.5 mmBtu/hr natural gas fired steam superheater, HTR-4040 (permit to install 02-4450)
- P008 - lime neutralization process (permit to install 02-08565)
- Z006 - alkali solution tank for lime neutralization process (permit to install 02-08565)
- T003 - 15,000-gallon storage tank for A feed, TNK-5914 (permit to install 02-7567)
- T004 - 15,000-gallon storage tank for B feed, TNK-1916 (permit to install 02-4450)
- S001 - storage silo #1 in TiO<sub>2</sub> slip system, SIL-2904 (permit to install 02-285)
- S002 - storage silo #2 in TiO<sub>2</sub> slip system, SIL-2905 (permit to install 02-285)
- S003 - storage silo #3 in TiO<sub>2</sub> slip system, SIL-2906 (permit to install 02-285)
- S004 - weigh hopper in TiO<sub>2</sub> slip system, HOP-2908 (permit to install 02-285)
- S005 - dispersion tank #1 in TiO<sub>2</sub> slip system, TNK-2911 (permit to install 02-285)
- S006 - dispersion tank #2 in TiO<sub>2</sub> slip system, TNK-2912 (permit to install 02-285)
- S007 - 25,000-gallon TiO<sub>2</sub> slurry product storage tank, TNK-2921 (permit to install 02-285)
- S008 - 25,000-gallon TiO<sub>2</sub> slurry product storage tank, TNK-2922 (permit to install 02-285)
- Z002 - 5,250-gallon wastewater treatment tank containing predominantly inorganics (TNK-8201)
- Z003 - 4,300-gallon wastewater treatment tank containing predominantly inorganics (TNK-8220)
- Z004 - 40,000-gallon wastewater treatment tanks
- Z005 - 10,000-gallon vegetable oil storage tank (TNK-5560)
- Z007 - dilution tank (TNK-7101), heating tank (TNK-7103), treatment tank A (TNK-7105), treatment tank B (TNK-7107), treatment tank C (TNK-7109), treatment tank D (TNK-7111), small filter feed tank (TNK-7113) and #1 filter feed tank (TNK-2104)
- Z008 - 25,000-gallon 20 - 25 wt% aqueous hydrochloric acid storage tank (TNK-1402)

**A. State and Federally Enforcable Section (continued)**

Z009 - 25,000-gallon 20 - 25 wt% aqueous hydrochloric acid storage tank (TNK-1403)  
Z010 - 25,000-gallon 20 - 25 wt% aqueous hydrochloric acid storage tank (TNK-1405)  
Z011 - 6,000-gallon 20 - 25 wt% aqueous hydrochloric acid storage tank (TNK-2112)  
Z013 - 7,000-gallon HCl storage tank  
Z016 - sluice storage tank (TNK-1260)  
Z017 - sluice storage tank (TNK-1261)  
Z018 - 5,264-gallon 20 - 25 wt% aqueous hydrochloric acid storage  
Z019 - 3,000-gallon storage tank for product additive (TNK-2750)  
Z020 - 7,994-gallon caustic storage tank (TNK-1616)  
Z021 - sluice slurry circulation storage tank (TNK-1279)  
Z022 - sluice slurry circulation storage tank (TNK-1280)  
Z023 - sluice slurry storage tank (TNK-1260)  
Z024 - sluice slurry storage tank(TNK-1261)  
Z026 - HCl storage tank (TNK-8313)  
Z027 - 12,000-gallon HTCS storage tank (TNK-2140)  
Z028 - 2,100-gallon phosphoric acid storage tank (TNK-2150)  
Z029 - 25,000-gallon caustic storage tank (TNK-2155)  
Z031 - 10,000-gallon dispersant storage tank (TNK-2970)  
Z032 - 500-gallon AMP tank (TNK-2975)  
Z033 - 500-gallon TMP tank  
Z300 - TiCl<sub>4</sub> storage tanks (TNKS-1511,1567,5510,5516,5518,1501,1566) with SBR-5570A/B  
Z301 - hydrogen peroxide tank (TNK-3307)  
Z302 - calcium chloride storage tank  
Z505 - sodium aluminate tank (TNK-2170)  
Z506 - sodium silicate tank (TNK-2180)  
Z508 - defoamer chemical storage tank  
Z509 - biocide chemical storage tank

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 the identified permit to install for the emissions unit. Insignificant emissions units listed above that are not subject to specific permit to install requirements are subject to one or more applicable requirements contained in the federally-approved versions of OAC Chapters 3745-17, 3745-18, and/or 3745-21.

**B. State Only Enforceable Section**

1. The following insignificant emissions units located at this facility are exempt from permit requirements because they are not subject to any applicable requirements (as defined in OAC rule 3745-77-01(H)) or because they meet the "de minimis" criteria established in OAC rule 3745-15-05:

S009 - rail car loading of TiO<sub>2</sub> slurry product material  
S010 - tank truck loading of TiO<sub>2</sub> slurry product material  
S011 - 45,000-gallon slurry surge tank - process A (TNK-2001)  
S012 - 45,000-gallon slurry surge tank - process A (TNK-2002)  
S013 - 45,000-gallon slurry surge tank - process A (TNK-2003)  
S014 - 66,000-gallon slurry surge tank - process B (TNK-6001)  
S015 - 66,000-gallon slurry surge tank - process B (TNK-6002)  
S016 - 66,000-gallon slurry surge tank  
S017 - 66,000-gallon slurry surge tank  
S018 - #1 rotary drum vacuum filter (FLT-2311) and vacuum receiver (SEP-2350) - process A  
S019 - #2 rotary drum vacuum filter (FLT-2321) and vacuum receiver (SEP-2360) - process A  
S020 - #3 rotary drum vacuum filter (FLT-2331) and vacuum receiver (SEP-2370) - process A  
S021 - #4 rotary drum vacuum filter (FLT-7341) and vacuum receiver (SEP-7345) - process B  
S022 - #5 rotary drum vacuum filter (FLT-7351) and vacuum receiver (SEP-7355) - process B  
S023 - #6 rotary drum vacuum filter (FLT-7361) and vacuum receiver (SEP-7365) - process B  
S024 - #7 rotary drum vacuum filter (FLT-7370) and vacuum receiver (SEP-7382) - process B  
S025 - bin used to feed micronizer #1 - process A (BIN-2701)  
S028 - bin used to feed micronizer #3 (BIN-2708) and micronizer gas filter (FLT-2763) - process A  
S029 - bin used to feed micronizer #4 (BIN-7701) and micronizer gas filter (BAG-7709) - process B  
S030 - bin used to feed micronizer #5 (BIN-7721) and micronizer gas filter (BAG-7729) - process B  
S031 - bin used to feed micronizer #6 (BIN-7841) and micronizer gas filter (BAG-7749) - process B  
S032 - bin used to feed packer #1 (BIN-2810) and packer #1 (PAC-2810) - process A

**B. State Only Enforceable Section (continued)**

S033 - bin used to feed packer #2 (BIN-2820) and packer #2 (PAC-2820) - process A  
S034 - bin used to feed packer #3 (BIN-2830) and packer #3 (PAC-2830) - process A  
S035 - #1 semi bulk bin - process A (BIN-2841)  
S036 - #4 packer feed bin - process B (BIN-7840)  
S037 - #5 packer feed bin - process B (BIN-7850)  
S038 - #6 packer feed in - process B (BIN-7860)  
S039 - #2 semibulk bin - process B (BIN-7820)  
S040 - #3 semibulk bin - process B (BIN-7830)  
S041 - #2 dry blend back collector - process B (HOP-7766)  
S042 - product packer #4 (PAC-7840), product packer #5 (PAC-7850) and product packer #6 (PAC-7860) - process B  
S043 - #1 Dry Blend Back Collector  
S044 - lime feed bin for treatment of boiler water (HOP-4017)  
Z001 - chlorine unloading area  
Z007 - dilution tank (TNK-7101), heating tank (TNK-7103), treatment tank A (TNK-7105), treatment tank B (TNK-7107), treatment tank C (TNK-7109), treatment tank D (TNK-7111), small filter feed tank (TNK-7113) and #1 filter feed tank (TNK-2104)  
Z034 - #1 settling tank (TNK-2412)  
Z035 - #2 settling tank (TNK-2415)  
Z036 - #3 settling tank (TNK-2415)  
Z037 - finishing flow tank (TNK-8375)  
Z038 - 5,000-gallon screener discharge tank  
Z039 - 5,000-gallon mix tank  
Z100 - diesel powered pump motor used for pumping water to put out fires during an emergency (PMA-4008)  
Z101 - back-up NG electrical power generator for outfall sump power  
Z102 - back-up NG electrical power generator  
Z103 - back-up NG electrical power generator  
Z104 - back-up NG electrical power generator  
Z200 - sandblasting  
Z500 - #1 blend tank treatment process B  
Z501 - #2 blend tank treatment process B  
Z502 - #3 blend tank treatment process B  
Z503 - #4 blend tank treatment process B  
Z504 - #2 Filter Feed Tank Process B (TNK-7115)  
Z507 - #5 blend tank treatment process B  
Z900 - maintenance scrubber system

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Boiler #1 (B001)  
**Activity Description:** natural gas or fuel oil fired boiler (BLR-4012).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
69 mmBtu/hr natural gas fired or fuel oil fired boiler; Co. ID: BLR-4012	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20 percent opacity as a 6-minute average, except as provided by the rule.
	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 pound per million Btu of actual heat input whenever only natural gas or number 2 fuel oil is employed.
	OAC rule 3745-17-10(C)(1)	The PE rate shall not exceed 0.22 pound per million Btu of actual heat input whenever a fuel other than natural gas or number 2 fuel oil is employed. See section A.I.2.a.
	OAC rule 3745-18-06(B)	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 1.6 pounds per million Btu of actual heat input whenever fuel oil is employed.

##### 2. Additional Terms and Conditions

- 2.a The allowable, hourly PE rate, whenever fuel other than natural gas or number 2 oil is burned, is based on calculation formula "c", Curve P-1 within OAC rule 3745-17-10.

##### II. Operational Restrictions

- The quality of the oil burned in this emissions unit shall have a sulfur content and heat content sufficient to comply with the allowable SO<sub>2</sub> emission limitation of 1.6 pounds of SO<sub>2</sub> per million Btu of actual heat input.

Compliance with the above-mentioned specification shall be determined using the analytical results provided by the permittee or oil supplier for each shipment of oil.

### 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 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 eliminate the visible emissions.
2. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.
3. For each day during which the permittee burns a fuel, the permittee shall maintain a record of the type of fuel burned in this emissions unit.
4. For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated SO<sub>2</sub> emissions rate in lbs/mmBtu. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.
5. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternatively, equivalent methods may be used upon written approval by the Ohio EPA Northeast District Office.

### IV. Reporting Requirements

1. The permittee shall notify the Northeast District Office in writing of the actual date of resuming operations at this emissions unit, within 30 days after such date.
2. 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, (b) state whether the emissions are representative of normal operations, (c) state the cause of abnormal emissions and (d) 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.

#### IV. Reporting Requirements (continued)

3. The permittee shall notify the Northeast District Office in writing of any record which shows a deviation of the allowable SO<sub>2</sub> emissions limitation based upon the calculated SO<sub>2</sub> emission rates from Section A.III above. The notification shall include a copy of such record and shall be sent to the Northeast District Office within 45 days after the deviation occurs. The deviation report shall include:
  - a. the permittee's or oil supplier's analyses for the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil;
  - b. the total quantity of oil received in each shipment (gallons); and
  - c. the calculated SO<sub>2</sub> emission rate (lbs/mmBtu) for each shipment of oil.

#### V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 and A.I.2. 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: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

- 1.b Emission Limitation: 0.020 lb PE/mmBtu whenever natural gas or number 2 fuel oil is burned.

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

- i. Determination of the worst case PE rate when natural gas is burned may be based on the following calculation:

$$PE(N \text{ Gas}) = cf/1000 \text{ Btu} \times EF(N \text{ Gas}).$$

where:

$$PE(N \text{ Gas}) = \text{PE rate from the boiler when natural gas is burned, in pounds per million Btu.}$$

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

EF(N gas) = 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).

- ii. Determination of the worst case PE rate when number 2 fuel oil is burned may be based on the following calculation:

$$PE(2 \text{ Oil}) = gal/Btu \times EF(2 \text{ Oil}).$$

where:

$$PE(2 \text{ Oil}) = \text{PE rate from the boiler when number 2 fuel oil is burned, in pounds per million Btu.}$$

gal/Btu = heat value of number 2 oil, which is gal/140,000 Btu as noted in the permit application.

EF(2 Oil) = the emission factor for PE, which is 2 lbs/1,000 gallons of fuel burned as specified in AP-42, Table 1.3-1, Chapter 1.3 (9/98).

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5, and the procedures specified in OAC rule 3745-17-03(B)(9).

## V. Testing Requirements (continued)

- 1.c** Emission Limitation: 0.22 lb PE/mmBtu whenever a fuel other than natural gas or number 2 fuel oil is employed.

Applicable Compliance Method: To determine the worst case, PE rate when number 6 fuel oil is burned, the following calculation may be used:

$$PE(6 \text{ Oil}) = \text{gal/Btu} \times EF(6 \text{ Oil}).$$

where:

PE(6 Oil) = PE rate from the boiler when number 6 fuel oil is burned, in pounds per million Btu.

gal/Btu = heat value of number 6 oil, which is gal/140,000 Btu as noted in the permit application.

EF(6 Oil) = the emission factor for PE, which is 10 lbs/1,000 gallons of fuel burned as specified in AP-42, Table 1.3-1, Chapter 1.3 (9/98).

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5, and the procedures specified in OAC rule 3745-17-03(B)(9).

- 1.d** Emission Limitation: 1.6 lbs SO<sub>2</sub>/mmBtu whenever fuel oil is employed.

Applicable Compliance Method: Compliance shall be determined based upon the record keeping in Section A.III. using the following equation specified in OAC rule 3745-18-04(F)(2) for each shipment of oil:

$$SO_2 = [(1 \times 10^6) / H] \times D \times S \times 1.974.$$

where:

SO<sub>2</sub> = SO<sub>2</sub> emission rate when liquid fuel is burned in the boiler, in lbs/mmBtu.

H = heat content of the liquid fuel, in Btu/gal, determined in accordance with Section A.III requirements.

D = density of the liquid fuel, in lbs/gal.

S = decimal fraction of sulfur in the liquid fuel, determined in accordance with Section A.III requirements.

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4, and 6 or 6C and the procedures in OAC rule 3745-18-04.

## 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**2. Additional Terms and Conditions**

None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record Keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Boiler #2 (B002)  
**Activity Description:** natural gas or fuel oil fired boiler (BLR-4014).

#### 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
69 mmBtu/hr natural gas fired or fuel oil fired boiler; Co. ID: BLR-4014	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20 percent opacity as a 6-minute average, except as provided by the rule.
	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 pound per million Btu of actual heat input whenever only natural gas or number 2 fuel oil is employed.
	OAC rule 3745-17-10(C)(1)	The PE rate shall not exceed 0.22 pound per million Btu of actual heat input whenever a fuel other than natural gas or number 2 fuel oil is employed. See section A.I.2.a.
	OAC rule 3745-18-06(B)	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 1.6 pounds per million Btu of actual heat input whenever fuel oil is employed.

##### 2. Additional Terms and Conditions

- 2.a The allowable, hourly PE rate, whenever fuel other than natural gas or number 2 oil is burned, is based on calculation formula "c", Curve P-1 within OAC rule 3745-17-10.

##### II. Operational Restrictions

1. The quality of the oil burned in this emissions unit shall have a sulfur content and heat content sufficient to comply with the allowable SO<sub>2</sub> emission limitation of 1.6 pounds of SO<sub>2</sub> per million Btu of actual heat input.

Compliance with the above-mentioned specification shall be determined using the analytical results provided by the permittee or oil supplier for each shipment of oil.

### 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 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 eliminate the visible emissions.
2. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.

3. For each day during which the permittee burns a fuel, the permittee shall maintain a record of the type of fuel burned in this emissions unit.
4. For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of oil received, the permittee's or oil supplier's analyses for sulfur content and heat content, and the calculated SO<sub>2</sub> emissions rate in lbs/mmBtu. A shipment may be comprised of multiple tank truck loads from the same supplier's batch, and the quality of the oil for those loads may be represented by a single batch analysis from the supplier.
5. The permittee shall collect or require the oil supplier to collect a representative grab sample for each shipment of oil that is received for burning in this emissions unit. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with the following ASTM methods: ASTM method D4294, ASTM method D240, or ASTM method 6010 for sulfur content; and ASTM method D240 for heat content. Alternatively, equivalent methods may be used upon written approval by the Ohio EPA Northeast District Office.

### IV. Reporting Requirements

1. The permittee shall notify the Northeast District Office in writing of the actual date of resuming operations at this emissions unit, within 30 days after such date.
2. 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, (b) state whether the emissions are representative of normal operations, (c) state the cause of abnormal emissions and (d) 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.

#### IV. Reporting Requirements (continued)

3. The permittee shall notify the Northeast District Office in writing of any record which shows a deviation of the allowable SO<sub>2</sub> emissions limitation based upon the calculated SO<sub>2</sub> emission rates from Section A.III above. The notification shall include a copy of such record and shall be sent to the Northeast District Office within 45 days after the deviation occurs. The deviation report shall include:
  - a. the permittee's or oil supplier's analyses for the sulfur content (percent) and heat content (Btu/gallon) for each shipment of oil;
  - b. the total quantity of oil received in each shipment (gallons); and
  - c. the calculated SO<sub>2</sub> emission rate (lbs/mmBtu) for each shipment of oil.

#### V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 and A.I.2. 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: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

- 1.b Emission Limitation: 0.020 lb PE/mmBtu whenever natural gas or number 2 fuel oil is burned.

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

- i. Determination of the worst case PE rate when natural gas is burned may be based on the following calculation:

$$PE(N \text{ Gas}) = cf/1000 \text{ Btu} \times EF(N \text{ Gas}).$$

where:

$$PE(N \text{ Gas}) = \text{PE rate from the boiler when natural gas is burned, in pounds per million Btu.}$$

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

EF(N gas) = 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).

- ii. Determination of the worst case PE rate when number 2 fuel oil is burned may be based on the following calculation:

$$PE(2 \text{ Oil}) = gal/Btu \times EF(2 \text{ Oil}).$$

where:

$$PE(2 \text{ Oil}) = \text{PE rate from the boiler when number 2 fuel oil is burned, in pounds per million Btu.}$$

gal/Btu = heat value of number 2 oil, which is gal/140,000 Btu as noted in the permit application.

EF(2 Oil) = the emission factor for PE, which is 2 lbs/1,000 gallons of fuel burned as specified in AP-42, Table 1.3-1, Chapter 1.3 (9/98).

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5, and the procedures specified in OAC rule 3745-17-03(B)(9).

## V. Testing Requirements (continued)

- 1.c** Emission Limitation: 0.22 lb PE/mmBtu whenever a fuel other than natural gas or number 2 fuel oil is employed.

Applicable Compliance Method: To determine the worst case, PE rate when number 6 fuel oil is burned, the following calculation may be used:

$$PE(6 \text{ Oil}) = \text{gal/Btu} \times EF(6 \text{ Oil}).$$

where:

PE(6 Oil) = PE rate from the boiler when number 6 fuel oil is burned, in pounds per million Btu.

gal/Btu = heat value of number 6 oil, which is gal/140,000 Btu as noted in the permit application.

EF(6 Oil) = the emission factor for PE, which is 10 lbs/1,000 gallons of fuel burned as specified in AP-42, Table 1.3-1, Chapter 1.3 (9/98).

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5, and the procedures specified in OAC rule 3745-17-03(B)(9).

- 1.d** Emission Limitation: 1.6 lbs SO<sub>2</sub>/mmBtu whenever fuel oil is employed.

Applicable Compliance Method: Compliance shall be determined based upon the record keeping in Section A.III. using the following equation specified in OAC rule 3745-18-04(F)(2) for each shipment of oil:

$$SO_2 = [(1 \times 10^6) / H] \times D \times S \times 1.974.$$

where:

SO<sub>2</sub> = SO<sub>2</sub> emission rate when liquid fuel is burned in the boiler, in lbs/mmBtu.

H = heat content of the liquid fuel, in Btu/gal, determined in accordance with Section A.III requirements.

D = density of the liquid fuel, in lbs/gal.

S = decimal fraction of sulfur in the liquid fuel, determined in accordance with Section A.III requirements.

If required, the permittee shall demonstrate compliance with this emission limitation by stack testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4, and 6 or 6C and the procedures in OAC rule 3745-18-04.

## 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**2. Additional Terms and Conditions**

None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record Keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Boiler #3 (B005)

**Activity Description:** natural gas fired, low NOx burner, FGR, IFGR boiler (BLR-4030).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
90 mmBtu/hr natural gas fired low NOx burner boiler; Co. ID: (Boiler No. 3) BLR-4030	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) shall not exceed 20 percent opacity as a 6-minute average, except as provided by the rule.
	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 pound per million Btu of actual heat input whenever natural gas is employed. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-08	The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules. On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). When the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" will no longer exist as part of the federally-approved SIP for Ohio, and this term and condition will no longer be applicable to this emissions unit.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
	OAC rule 3745-23-06(B)	The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology requirements established in PTI 02-4450. Low NOx burner(s) must be utilized to control NOx emissions.
	OAC rule 3745-31-05(A)(3) PTI 02-4450	The PE rate shall not exceed 0.54 lb/hr and 2.35 TPY. Carbon monoxide (CO) emissions shall not exceed 6.28 lbs/hr and 27.5 tons/yr. Nitrogen oxides (NOx) emissions shall not exceed 3.65 lbs/hr and 16.0 tons/yr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08 and 3745-23-06(B).
	40 CFR 60.40c-60.48c	This emissions unit 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. Additional Terms and Conditions

- 2.a Because this emissions unit burns only natural gas, there is no applicable SO2 emissions limitation in OAC Chapter 3745-18.

## II. Operational Restrictions

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

## III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
2. The permittee shall maintain daily records of the number of hours of operation of this emissions unit.
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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: 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 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.
2. The permittee shall submit annual reports that specify the PE rate and the CO and NOx 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.
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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: 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 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: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

- 1.b Emission Limitation: 0.54 lb/hr PE.

Applicable Compliance Method(s): The measured PE rate was determined to be 0.09 lb/hr via U.S. EPA Methods 1-5 tests conducted on July 28, 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 and the procedures specified in OAC rule 3745-17-03(B)(10).

- 1.c Emission Limitation: 6.28 lbs/hr CO.

Applicable Compliance Method(s): The measured CO emissions rate was determined to be 4.37 lbs/hr via U.S. EPA Methods 1-4 and 10 tests conducted on July 28, 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 10.

- 1.d Emission Limitation: 3.65 lbs/hr NOx.

Applicable Compliance Method(s): The measured NOx emissions rate was determined to be 2.07 lbs/hr via U.S. EPA Methods 1-4 and 7E tests conducted on July 28, 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 7E.

- 1.e Emission Limitation(s): 2.35 TPY PE, 27.5 TPY CO and 16.0 TPY NOx.

Applicable Compliance Method(s): To determine the annual rate for PE, CO and NOx, the actual, hourly, emission rate as determined in section A.V.1.b., A.V.1.c. and A.V.1.d., respectively 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.

**V. Testing Requirements (continued)**

2. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.V.1.a. through A.V.1.e. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

**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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**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 (F001)  
**Activity Description:** Paved and unpaved roadways and parking lots

#### 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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 and parking areas	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 equally effective control measures to ensure compliance.
- 2.b The permittee shall employ reasonably available control measures on all unpaved roadways and unpaved 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 unpaved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other equally effective 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 or any unpaved parking area, 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

The unpaved roadway inspection frequency is deemed to be acceptable because unpaved roadways are not frequently traveled. The majority of traffic at this facility is on the paved roadways.

- 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.

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

3. Notwithstanding the frequencies of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from 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.

4. The permittee shall maintain records of the following information:
  - a. an identification of each roadway segment and parking area inspected and 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. for each roadway segment and parking area, whether or not visible emissions were noted during traffic;
  - d. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;
  - e. the dates the control measures were implemented; and
  - f. 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.f. shall be kept separately for (i) the paved roadways and paved parking areas and (ii) the unpaved roadways and unpaved parking areas, 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 all 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, 2001, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

**V. Testing Requirements (continued)**

- 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, 2002, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**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:** Chlorination A Process (P001)

**Activity Description:** TiCl4 production process A.

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>Train "A" Chlorination process: including two chlorinators (CHL-1202 and CHL-5203), two cyclones (CYC-1202 and CYC-5203) and two condensers (CND-1211 and CND-1212) with a demister (MEL-1212), a spray tower wet scrubber (TWR-1305), a venturi scrubber (SBR-1305), a separator (SEP-1315) and a packed tower scrubber (TWR-1320) that are used to control normal production emissions via P001STK1310 egress.</p>	<p>OAC rule 3745-17-07(A)</p>	<p>Visible particulate emissions (PE) from any stack egress shall not exceed 20% opacity as a 6-minute average, except as specified by rule.</p>
<p>(In addition a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380) are used to control emissions during normal and maintenance operations via the STK-SNAKE egress. A venturi scrubber (SBR-0100) and a separator (SEP-0101) are used to control emissions during cold startup operations via STK-0102 egress.)</p>	<p>OAC rule 3745-17-11</p>	<p>The total PE rate shall not exceed 29.1 lbs/hr. See section A.I.2.a.</p>
	<p>OAC rule 3745-18-06(D)(2)</p>	<p>Sulfur dioxide (SO2) emissions shall not exceed 213 lbs/hr. See section A.I.2.b.</p>

## 2. Additional Terms and Conditions

- 2.a The allowable, hourly PE rate is based on Table I 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 by emissions testing or by using emissions factors.
- 2.b The measured SO<sub>2</sub> emissions rate during normal production operations at the P001STK1310 egress point was determined to be 5.8 lbs/hr via a U.S. EPA Method 6C test conducted on July 31, 1999 and August 1, 1999. Since there is no equipment to control SO<sub>2</sub> emissions, the potential emissions should always be within the allowable SO<sub>2</sub> emissions limit. No monitoring, record keeping or reporting requirements to verify compliance with the hourly SO<sub>2</sub> emissions limit are needed.
- 2.c The following control equipment are used to control emissions during normal and maintenance operations at this emissions unit and also to control emissions during normal and maintenance operations at Train "B" Chlorination Process (P006): a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380).
- 2.d The following control equipment are used to control emissions during startup operations at this emissions unit and also to control emissions during startup operations at Train "B" Chlorination Process (P006): a venturi scrubber (SBR-0100) and a separator (SEP-0101).

## II. Operational Restrictions

- 1. The venturi scrubber SBR-1305 shall be maintained at not less than 5 gallons/minute or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance at all times while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods.
- 2. The venturi scrubber SBR-5375 shall be maintained less 5 gallons/minute or the minimum value established either during the most recent emissions test that demonstrated that the emissions unit was in compliance at all times while any part of the emissions unit is in normal and/or maintenance operation except during startup, shutdown, maintenance or calibration periods.
- 3. The venturi scrubber SBR-0100 shall be maintained at not less than 5 gallons/minute or the minimum value established either during the most recent emissions test that demonstrated that the emissions unit was in compliance at all times while the emissions unit is in cold startup operation except during startup, shutdown, maintenance or calibration periods.

## III. Monitoring and/or Record Keeping Requirements

- 1.a The permittee shall properly install by the effective date of this permit, and thereafter properly operate and maintain equipment to continuously monitor the operating parameters specified in sections A.II.1, A.II.2 and A.II.3. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
- 1.b The permittee shall collect and record the following information each day:
  - i. the venturi scrubber SBR-1305 water flow rate, in gallons per minute, on a once/12-hour basis while the emissions unit is in normal operation;
  - ii. the venturi scrubber SBR-5375 water flow rate, in gallons per minute, on a once/12-hour basis while the emissions unit is in normal and/or maintenance operation;
  - iii. the venturi scrubber SBR-0100 water flow rate, in gallons per minute, on a once/12-hour basis while the emissions unit is in cold startup operation; and
  - iv. the operating times for the capture (collection) system(s), control devices, monitoring equipment, and the associated emissions unit.

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

- 2.a** The permittee shall operate and maintain existing equipment to continuously monitor and record the chlorine concentration in parts per million at the P001STK1310 egress. 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.
- 2.b** The permittee shall implement a Standard Operating Procedure to respond to excessive levels of chlorine concentrations as determined by the continuous monitor. Such a procedure shall include acknowledgement of an alarm condition by operating personnel, the cause of the alarm, and corrective action taken.

### IV. Reporting Requirements

- 1.a** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during normal operation when the the venturi scrubber SBR-1305 water flow rate was not maintained at or above the required levels specified in section A.II.1.
- 1.b** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during normal operation and/or maintenance operation when the venturi scrubber SBR-5375 water flow rate was not maintained at or above the required levels specified in section A.II.2.
- 1.c** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during cold startup operation when the venturi scrubber SBR-0100 water flow rate not maintained at or above the required levels specified in section A.II.3.
- 2.a** 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, duration of each instance and the total chlorine emissions for each incident (in pounds) where the chlorine emissions were in excess of the reportable quantity required by the Emergency Planning and Community Right-to-Know Act (EPCRA), except during calibration spans, and the corrective actions taken (if any).
- 2.b** Within thirty (30) days following the end of each calendar quarter, the permittee shall submit reports to the Northeast District Office 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: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

- 1.b** Emission Limitation: 29.1 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 and the procedures specified in OAC rule 3745-17-03(B)(10).

## V. Testing Requirements (continued)

- 1.c** Emission Limitation: 213 lbs/hr SO<sub>2</sub>.

Applicable Compliance Method(s): The measured SO<sub>2</sub> emissions rate during normal production at P001STK1310 egress point was determined to be 5.8 lbs/hr via a U.S. EPA Method 6C test conducted on July 31, 1999 and August 1, 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 and the procedures in OAC rule 3745-18-04.

- 2.** The permittee shall submit a notification to the Ohio EPA Northeast District Office, prior to the proposed observation date, that cold startup operations will be conducted at one of the chlorinators. The permittee shall conduct, or have conducted, visible particulate emission observations of the STK-0102 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 P001STK1310 egress point(s) during normal production at the maximum capacity.

## **V. Testing Requirements (continued)**

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**2. Additional Terms and Conditions**

None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record Keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Spray Dryer A (P002)  
**Activity Description:** TiO2 spray dryer A (DRY-2505).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Train "A" Finishing process: including a TiO2 paste feed tank (TNK-2501), TiO2 paste dryer (DRY-2505), a 24 mmBtu/hr natural gas fired burner (BRN-2508) with two product capture baghouses (BAG-2515 and BAG-2520) to control particulate emissions via STK-2535.	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11	The PE rate shall not exceed 19.2 lbs/hr. See section A.I.2.a.

##### 2. Additional Terms and Conditions

- The allowable, hourly PE rate is based on curve P-1 within Figure II of OAC rule 3745-17-11, based on estimates of the uncontrolled mass rate of emissions, which is more stringent than the allowable emissions rate derived from Table I of OAC rule 3745-17-11.
- Because this emissions unit burns only natural gas, there is no applicable SO2 emissions limitation in OAC Chapter 3745-18.

##### II. Operational Restrictions

- The permittee shall burn only natural gas in the Train "A" TiO2 paste dryer burner (BRN-2508).

##### III. Monitoring and/or Record Keeping Requirements

- 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.

### 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. Notwithstanding the frequency of the inspections specified in section A.III.2, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.

### IV. Reporting Requirements

1. 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 Train "A" TiO<sub>2</sub> paste dryer burner (BRN-2508). Each report shall be submitted within 30 days after the deviation occurs.
2. 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.

### 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 PE.

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

## V. Testing Requirements (continued)

**1.b** Emission Limitation: 19.2 lbs PE/hr.

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

$$E_{PE} = V_{slurry} \times EF.$$

Where the following applies:

$E_{PE}$  = PE rate, in pounds per hour.

$V_{slurry}$  = volume rate of TiO<sub>2</sub> slurry processed at the paste dryer (DRY-2505), which was 32 gallons/hour during a US EPA Method 5 test conducted on February 20, 2002.

EF = PE emissions factor of 0.0013 lb PE/gal TiO<sub>2</sub> slurry, as developed from measured data recorded during a U.S. EPA Method 5 test conducted on February 20, 2002.

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 and the procedures specified in OAC rule 3745-17-03(B)(10).

## VI. Miscellaneous Requirements

1. Emissions unit P002 previously included process units associated with a non-insignificant emissions unit, (P011) Train "A" Oxidation Process, and the following newly designated insignificant emissions units: (S008 - S009) Train "A" Slurry Surge Tanks Nos. 1, 2 and 3; (Z400) Train "A" Wet Slurry Flow Treatment; (S016 - S018) Train "A" Rotary Drum Vacuum filter Separators Nos. 1, 2 and 3; (S023 - S026) Train "A" Micronizing (Grinding) Operations; and (S030 - S033) Train "A" Dry Pigment Packaging.

**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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**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:** Chlorination B Process (P006)  
**Activity Description:** TiCl4 production process B.

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>Train "B" Chlorination Process: including two chlorinators (CHL-5201, CHL-5203), two cyclones (CYC-5201, CYC-5203), a quench column (CND-5208), two condensers (CND-5211, CND-5212) with a mist eliminator (MEL-5212), a spray tower wet scrubber (TWR-5300), a venturi scrubber (SBR-5305), which controls PE, a separator tower (SEP-5310) followed by a 17.6 mmBtu/hr natural gas fired thermal convertor (BRN-5330), which controls CO and OC emissions and which transfers heat to a heat recovery boiler, and a water quench with a packed column caustic scrubber mist eliminator (SBR-5390), which controls H2SO4 mist emissions during normal operations via a stack egress (STK-5355)</p>	<p>OAC rule 3745-15-06(D)</p>	<p>A Preventative Maintenance Malfunction Abatement Plan (PMMAP) shall be implemented to prevent, detect and correct malfunctions or equipment failures which could result in emissions exceeding any applicable law. The PMMAP, submitted on November 20, 2002, addresses a safety bypass line, and a 17.6 mmBtu/hr natural gas fired thermal convertor (BRN-5330) to control carbon monoxide (CO) and organic compound (OC) emissions during normal operations via a stack egress (STK-5355).</p>
<p>(In addition a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375), which controls PE, and a separator tower (SEP-5380) are used during normal and maintenance operations via a stack egress (STK-SNAKE). A venturi scrubber (SBR-0100), which controls PE, and a separator tower (SEP-0101) are used during cold startup operations via stack egress (STK-0102).)</p>		

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
	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 shall not exceed 29.1 lbs/hr. See section A.I.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).
	OAC rule 3745-18-06(D)(2)	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 213 lbs/hr. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-08	The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules. On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). When the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" will no longer exist as part of the federally-approved SIP for Ohio, and this term and condition will no longer be applicable to this emissions unit.
	OAC rule 3745-23-06(B)	The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology requirements established in PTI 02-4450.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
	OAC rule 3745-31-05(A)(3) PTI 02-4450	The PE shall not exceed 1.25 lbs/hr and 5.48 TPY. SO <sub>2</sub> emissions shall not exceed 8.9 lbs/hr and 39 TPY. CO emissions shall not exceed 12.7 lbs/hr and 55.7 tons/yr. Nitrogen oxides (NO <sub>x</sub> ) emissions shall not exceed 0.5 lb/hr and 2.19 tons/yr. Hydrogen chloride (HCl) emissions shall not exceed 3.79 lbs/hr and 16.6 TPY. Methane injection must be employed to control chlorine emissions from a chlorine release that occurs during a safety bypass of the thermal converter (BRN-5330) and the caustic scrubber (SBR-5390). The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-21-08 and 3745-23-06(B).

## 2. Additional Terms and Conditions

- 2.a** The allowable, hourly PE rate is based on Table I of 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 of OAC rule 3745-17-11, cannot be accurately ascertained by emissions testing or by using emissions factors.
- 2.b** The following control equipment are used to control emissions during normal and maintenance operations at this emissions unit and are also to control emissions during normal and maintenance operations at the Train "A" Chlorination Process (P001): a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380).
- 2.c** The following equipment are used to control emissions during startup operations at this emissions unit and also to control emissions during startup operations at the Train "A" Chlorination Process (P001): a venturi scrubber (SBR-0100) and a separator (SEP-0101).
- 2.d** There is a safety bypass line, which is employed whenever a malfunction that could cause a safety hazard occurs and which diverts separator tower SEP-5310 exhaust gases from reaching the thermal convertor BRN-5330. The safety bypass valve is an 8-inch butterfly valve with a normally closed, spring-return, pneumatic actuator.

## II. Operational Restrictions

1. The venturi scrubber SBR-5305, the thermal convertor BRN-5330 and the water quench with a packed column caustic scrubber mist eliminator SBR-5390 shall be maintained within the following operating parameter values at all times while the emissions unit is in normal operation except during startup, shutdown, maintenance or calibration periods:
  - a. for the venturi scrubber SBR-5305 water flow rate: not less 5 gallons/minute or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance;
  - b. for the thermal convertor BRN-5330 average combustion temperature: for any 3-hour block of time, not less than 1350 degrees Fahrenheit (762 degrees Celsius) as outlined in the PMMAP or no more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emissions test that demonstrated that emissions unit was in compliance; and
  - c. for the packed column caustic scrubber mist eliminator SBR-5390: the 20% caustic solution flow rate shall be maintained at or above 1 gallon/minute or not less than the minimum value(s) established during the most recent emissions test that demonstrated that the emissions unit was in compliance.
2. The venturi scrubber SBR-5375 shall be maintained at not less 5 gallons/minute or the minimum value established either during the most recent emissions test that demonstrated that the emissions unit was in compliance at all times while any part of the emissions unit is in normal and/or maintenance operation except during startup, shutdown, maintenance or calibration periods.
3. The venturi scrubber SBR-0100 shall be maintained at not less than 5 gallons/minute or the minimum value established either during the most recent emissions test that demonstrated that the emissions unit was in compliance at all times while any part of the emissions unit is in cold startup operation except during startup, shutdown, maintenance or calibration periods.

## III. Monitoring and/or Record Keeping Requirements

- 1.a The permittee shall properly install by the effective date of this permit, and thereafter properly operate and maintain, equipment to continuously monitor the operating parameters specified in sections A.II.1., A.II.2 and A.II.3. The monitoring devices and any recorders shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.
- 1.b The permittee shall collect and record the following information each day while the emissions unit is in normal operation:
  - i. the venturi scrubber SBR-5305 water flow rate, in gallons per minute, on a once/12-hour basis;
  - ii. all 3-hour blocks of time during which the average combustion temperature within the thermal convertor BRN-5330 was less than 1350 degrees Fahrenheit (762 degrees Celsius), or no more than 50 degrees Fahrenheit (28 degrees Celsius) below the average temperature during the most recent emissions test that demonstrated that the emissions unit was in compliance;
  - iii. packed column caustic scrubber mist eliminator SBR-5390 the 20% caustic solution flow rate, in gallons per minute; and
  - iv. the operating times for the capture (collection) system(s), control devices, monitoring equipment, and the associated emissions unit.

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

- 1.c** The permittee shall collect and record the following information each day while any part of the emissions unit is in normal and/or maintenance operation;
- i. the venturi scrubber SBR-5375 water flow rate, in gallons per minute, on a once/12-hour basis; and
  - ii. the operating times for the capture (collection) system(s), control devices, monitoring equipment, and the associated emissions unit.
- 1.d** The permittee shall collect and record the following information each day while any part of the emissions unit is in cold startup operation;
- i. the venturi scrubber SBR-0100 water flow rate, in gallons per minute, on a once/12-hour basis; and
  - ii. the operating times for the capture (collection) system(s), control devices, monitoring equipment, and the associated emissions unit.
- 2.** The permittee shall maintain records of all occasions of methane injection employment, used to control chlorine release emissions during a safety bypass of the thermal converter (BRN-5330) and the caustic scrubber (SBR-5390). The permittee shall collect and record the following information for each occasion:
- a. the date;
  - b. the commencement and completion times;
  - c. the duration, in minutes; and
  - d. the estimated chlorine emissions, in pounds; and
  - e. the corrective action(s) taken, (if any).
- 3.** The PMMAP, submitted on November 20, 2002, requires that the permittee collect and record the following information:
- a. a copy of the current PMMAP and previous revisions shall be kept on-site in accordance with Part I: General Terms and Conditions, section A.1.;
  - b. a record of the occurrence and duration of each malfunction incident of the thermal converter BRN-5330 and associated heat recovery boiler on a daily basis [a bypass of the thermal converter BRN-5330 while there is gas flow (with the exception of nitrogen gas or air) on a chlorinator is a malfunction];
  - c. a record of inspection of the safety bypass valve on a monthly basis to ensure that it is maintained in the closed position and the exhaust gas stream is not diverted through the bypass line;
  - d. a record of the measurement of the CO content within the bypass line on a monthly basis; and
  - e. the operating times for the capture (collection) system(s), control devices, monitoring equipment, and the associated emissions unit.
- 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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.III.1.a. 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 compliance with the underlying monitoring and record keeping requirements in the Permit to Install.

#### **IV. Reporting Requirements**

- 1.a** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during normal operation when the following control device parameters were not maintained at or above the required levels specified in section A.II.1.:
- i. the venturi scrubber SBR-5305 wet scrubber water flow rate;
  - ii. the thermal convertor BRN-5330 average combustion temperature, (all 3-hour blocks of time); and
  - iii. the packed column caustic scrubber mist eliminator SBR-5390 20% caustic solution flow rate.
- 1.b** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during normal operation and/or maintenance operation when venturi scrubber SBR-5375 wet scrubber water flow rate was not maintained at or above the required level specified in section A.II.2.
- 1.c** The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during cold startup operation when the venturi scrubber SBR-0100 wet scrubber water flow rate was not maintained at or above the required level specified in section A.II.3.
- 2.** The permittee shall submit methane injection employment reports that identify each occasion when the chlorine emissions were in excess of the reportable quantity required by the Emergency Planning and Community Right-to-Know Act (EPCRA), except during calibration spans. These reports shall contain the date, commencement and completion times, duration of each occasion, the total chlorine emissions for each occasion (in pounds), and the corrective actions taken (if any). Each report shall be submitted within 30 days after the reportable quantity chlorine release occurs.
- 3.a** Notification must be made to Northeast District Office within 24 hours after any of the following conditions occurs:
- i. a malfunction incident such that process equipment, control equipment or related equipment breaks down or fails in such a manner to cause air contaminant emissions above the allowable levels specified in section A.I.1;
  - ii. a malfunction has been corrected and the equipment is operational again; and
  - iii. actions are taken during a malfunction that are not consistent with the PMMAP.
- 3.b** Written notification must be made to Northeast District Office after actions are taken during a malfunction that are not consistent with the PMMAP within the specified time period(s) and shall include the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the PMMAP, whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred, and if there was delay in making repairs, proof that repair parts have been ordered or any other records that would explain that the delay was beyond the owner/operator's control:
- i. within 7 work days after the end of a malfunction incident, excluding malfunctions that affect temperature monitoring of the thermal convertor BRN-5330; and
  - ii. within 14 work days after the end of a thermal convertor BRN-5330 temperature monitoring malfunction incident.

#### **IV. Reporting Requirements (continued)**

- 3.c** The permittee shall submit quarterly deviation (excursion) reports to the Northeast District Office. If no malfunctions occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. These reports shall contain the following information for each malfunction incident:
- i. date;
  - ii. commencement time, completion time and duration;
  - iii. an identification of the process equipment and/or control equipment affected by the malfunction;
  - iv. an identification and estimated quantity of air contaminant emissions that have been or may have been emitted (in pounds);
  - v. the corrective actions taken (if any);
  - vi. whether the actions taken were consistent with the procedures specified in the PMMAP or not; and
  - vii. if applicable, the reasons why the PMMAP procedures were not followed.

- 3.d** Within thirty (30) days following the end of each calendar quarter, the permittee shall submit quarterly malfunction summary reports to the Northeast District Office. These reports shall contain the following information:
- i. the beginning and ending dates of the reporting period;
  - ii. the total operating time of the emissions unit during the reporting period;
  - iii. the identification of the air contaminant emissions and sum total duration of excess emissions for all malfunction incidents during the reporting period (recorded in minutes);
  - iv. the sum total duration of excess emissions for all malfunction incidents, expressed as a per cent of the total emissions unit operating time during the reporting period;
  - v. a summary account of incidents that were caused by the same type of malfunction during the reporting period; and
  - vi. if malfunctions that affect temperature monitoring of the thermal convertor BRN-5330 occurred, the following information:

- (1) the date of the most recent continuous temperature monitoring device certification or audit;
- (2) the total continuous temperature monitoring down-time during the reporting period;
- (3) the sum total duration of continuous temperature monitoring down-time expressed as a per cent of the total emissions unit operating time during the reporting period; and
- (4) a summary account of temperature monitoring malfunction incidents that were caused by the same type malfunction during the reporting period.

- 4.** The permittee shall submit annual reports that specify the PE and the CO, NO<sub>x</sub> 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.
- 5.** 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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.IV.1.a. through A.IV.4. 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):

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

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

## V. Testing Requirements (continued)

- 1.b** Emission Limitation: 1.25 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 and the procedures specified in OAC rule 3745-17-03(B)(10).

- 1.c** Emission Limitation: 8.9 lbs/hr SO<sub>2</sub>.

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 1-4 and 6C and the procedures in OAC rule 3745-18-04.

- 1.d** Emission Limitation: 12.7 lbs/hr CO.

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 1-4 and 10.

- 1.e** Emission Limitation: 0.5 lb/hr NO<sub>x</sub>.

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 1-4 and 7E.

- 1.f** Emission Limitation: 3.79 lbs/hr HCl.

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 1-4 and 26.

- 1.g** Emission Limitation(s): 5.48 TPY PE, 39 TPY SO<sub>2</sub>, 55.7 TPY CO, 2.19 TPY NO<sub>x</sub> and 16.6 TPY HCl.

Applicable Compliance Method(s): To determine the annual rate for PE, SO<sub>2</sub>, CO, NO<sub>x</sub> and HCl, the actual, hourly, emission rate as determined in section A.V.1.b., A.V.1.c., A.V.1.d., A.V.1.e. and A.V.1. f., respectively 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 sections A.III.1.b, A.III.1.c. and A.III.1.d., and divided by 2000 lbs/ton.

- 2.** The permittee shall submit a notification to the Ohio EPA Northeast District Office prior to the proposed observation date that cold startup operations will be conducted at one of the chlorinators. The permittee shall conduct, or have conducted, visible particulate emission observations of the STK-0102 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:

## V. Testing Requirements (continued)

- 3.a** The emission testing shall be conducted within 12 months after issuance of the permit or within 3 months of final issuance of PTI 02-15582, whichever is later. Another test shall be conducted within 6 months prior to permit expiration, for each pollutant that has a measured emissions rate that 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 visible opacity rate for particulate emissions and the allowable mass rates of PE, SO<sub>2</sub>, CO, NO<sub>x</sub> and HCl emissions.
- 3.c** The following test method(s) shall be employed to demonstrate compliance with the specified allowable limit:
- Method 9 of 40 CFR Part 60, Appendix A for visible opacity rate for particulate emissions;
  - Methods 1-4 and 5 of 40 CFR Part 60, Appendix A for the mass PE rate;
  - Methods 1-4 and 6C of 40 CFR Part 60, Appendix A for the mass SO<sub>2</sub> emissions rate;
  - Methods 1-4 and 10 of 40 CFR Part 60, Appendix A for the mass CO emissions rate;
  - Methods 1-4 and 7E of 40 CFR Part 60, Appendix A for the mass NO<sub>x</sub> emissions rate; and
  - Methods 1-4 and 26 of 40 CFR Part 60, Appendix A for the mass HCl emissions rate.

Alternative U.S.EPA approved test methods may be used with prior approval from the Ohio EPA.

- 3.d** The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office. The emission tests shall be performed at the STK5355 egress during normal production at the maximum capacity.
- 3.e** 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.

- 4.** Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.V.1.a. through A.V.3.e. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

## VI. Miscellaneous Requirements

- 1.a** The permittee's emission limitations, as set forth in the Permit to Install (PTI 02-4450), were based on the permittee's knowledge of this emissions unit's chemical processes, which was the only data available to the permittee at the time of the PTI application. At that time, no emission estimate was submitted for emissions of carbonyl sulfide ("COS"), as it was assumed the thermal convertor would destroy all COS emissions. In addition, no emission estimate for sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) mist was given at that time, as the permittee was unaware that it was generated during the emission control process. The estimated emission rates for the other pollutants in the application for PTI 02-4450 were accepted by Ohio EPA during the permit review process.

As a result of discoveries made at a similar permittee-owned plant located in the United Kingdom, this permittee became aware that H<sub>2</sub>SO<sub>4</sub> mist was possibly being emitted from this emissions unit. The permittee voluntarily conducted testing of the exhaust stack serving this emissions unit and obtained data showing that 1.7 lbs/hr or more of H<sub>2</sub>SO<sub>4</sub> mist was emitted. At a minimum rate of 1.7 lbs/hr, the potential to emit of H<sub>2</sub>SO<sub>4</sub> mist emissions would be 7.45 tons/year, assuming 8,760 hours per year of constant hourly emissions. As this facility is a major source for carbon monoxide emissions, this rate of H<sub>2</sub>SO<sub>4</sub> mist emissions is above the (seven) 7 tons/year significance level and is classified as a significant increase, as defined in OAC Rules 3745-31-01(WW).

The permittee informed Ohio EPA of the stack test results, which had also revealed that a small amount of COS was not destroyed in the thermal oxidizer during normal operations and was being released from this emissions unit. On August 9, 2001, the permittee submitted an application for a PSD PTI (application 02-15582), requesting revisions to its existing PTI to establish emissions limits for H<sub>2</sub>SO<sub>4</sub> mist and COS.

- 1.b** The permittee informed Ohio EPA of the stack test results, which had also revealed that a small amount of COS was not destroyed in the thermal oxidizer during normal operations and was being released from this emissions unit. On August 9, 2001, the permittee submitted an application for a PSD PTI (application 02-15582), requesting revisions to its existing PTI to establish emissions limits for H<sub>2</sub>SO<sub>4</sub> mist and COS. A best available control technology ("BACT") study for H<sub>2</sub>SO<sub>4</sub> mist control was also included in the permit application. The PTI application is currently being processed by the Ohio EPA; however, as of the effective date of this Title V permit, the final, modified PTI has not been issued. Issuance of the modified PTI will correct the alleged violations associated with OAC Rule 3745-31-02. Pending issuance of the final PTI 02-15582 and revision of this Title V permit, emissions of COS and H<sub>2</sub>SO<sub>4</sub> mist shall not exceed the hourly levels set forth for normal operations in PTI application 02-15582. Specifically, COS emissions shall not exceed 1.0 lb/hr and H<sub>2</sub>SO<sub>4</sub> mist emissions shall not exceed 4.5 lbs/hr. The permittee shall ensure on-going compliance with these emission rates by complying with the monitoring and record keeping requirements specified in Section A.III for the control devices and maintaining control device parameters at or above the levels specified in Section A.II.

Within 30 days after receipt of the final modified PTI (PTI number 02-15582), the permittee shall submit an application for a modification of this Title V operating permit that shall include emissions limits for this emissions unit for H<sub>2</sub>SO<sub>4</sub> mist and COS, as required by PTI 02-15582.

**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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**2. Additional Terms and Conditions**

None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record Keeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Spray Dryer B (P007)  
**Activity Description:** TiO2 spray dryer B (DRY-7510).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Train "B" Oxidation Process and Train "B" Finishing Process:		
Train "B" Oxidation Process includes an aluminum chloride generator (GEN-5808), an oxidation reactor (REA-5904), a flue pond (HEX-5904), a paire filter (FLT-5905), a slurry tank (TNK-5907)	OAC rule 3745-17-07(A)  OAC rule 3745-17-11	Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.  The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See section A.1.2.a. below.
5.9 mmBtu/hr natural gas-fired oxygen preheater (HTR-5902)	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)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.
	OAC rule 3745-21-08	See section A.1.2.b. below.
	OAC rule 3745-23-06(B)	See section A.1.2.c. below.
9.5 mmBtu/hr natural gas-fired TiCl4 vaporizer (VAP-5901)	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)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Train "B" Finishing Process includes a TiO <sub>2</sub> paste feed tank (TNK-7501), TiO <sub>2</sub> spray dryer (DRY-7510), a 37 mmBtu/hr natural gas-fired burner (BRN-7508) with 4 product capture baghouses (BAG 7515, BAG-7517, BAG-7519 and BAG-7521) to control particulate emissions at the STK-7537 egress.	OAC rule 3745-21-08  OAC rule 3745-23-06(B) OAC rule 3745-17-07(A)  OAC rule 3745-17-11	See section A.I.2.b. below.  See section A.I.2.c. below. Visible particulate emissions (PE) shall not exceed 20% opacity as a 6-minute average, except as specified by rule.  The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
Finishing process production operations [egress STK-7537(PE)].	OAC rule 3745-21-08  OAC rule 3745-23-06(B) OAC rule 3745-31-05(A)(3) PTI 02-4450	See section A.I.2.b. below.  See section A.I.2.c. below. The total PE rate shall not exceed 1.11 lbs/hr and 4.86 TPY. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).
Oxidation Process fuel combustion operations [TiCl <sub>4</sub> vaporizer (VAP-5901) and O <sub>2</sub> preheater (HTR-5902)] and Finishing Process fuel combustion operation [spray dryer burner (BRN-7508)].	OAC rule 3745-31-05(A)(3) PTI 02-4450	Nitrogen oxides (NO <sub>x</sub> ) emissions shall not exceed 4.36 lb/hr and 19.1 tons/yr. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A), OAC rule 3745-17-10, OAC rule 3745-21-08 and OAC rule 3745-23-06(B).

**2. Additional Terms and Conditions**

- 2.a** Exhaust gases from the paire filter (FLT-5905) product capture device, serving the oxidation reactor, are vented to the Train "B" Chlorination Process (P006) instead of the atmosphere. However, during startup or equipment pressure testing, nitrogen or oxygen is used to warm the oxygen preheater HTR-5902 so that no air contaminant emissions are generated when paire filter gases are exhausted to the atmosphere.
- 2.b** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules. On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). When the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" will no longer exist as part of the federally-approved SIP for Ohio, and this term and condition will no longer be applicable to this emissions unit.
- 2.c** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology requirements established in PTI 02-4450.

## 2. Additional Terms and Conditions (continued)

- 2.d** The 9.5 mmBtu/hr natural gas-fired TiCl<sub>4</sub> vaporizer (VAP-5901) has a restrictive flow orifice on the natural gas feed line to limit the maximum design inlet gas fuel flow to 9300 scfh, for an operating heat input of 9.5 mmBtu/hr. The natural gas burner has a nameplate of 14.6 mmBtu/hr.
- 2.e** Because this emissions unit burns only natural gas, there is no applicable SO<sub>2</sub> emissions limitation in OAC Chapter 3745-18.

## II. Operational Restrictions

1. The permittee shall burn only natural gas in the TiCl<sub>4</sub> vaporizer (VAP-5901) burner, in the O<sub>2</sub> preheater burner (HTR-5902) and in the TiO<sub>2</sub> paste dryer burner (BRN-7508).

## III. Monitoring and/or Record Keeping Requirements

1. For each day during which the permittee burns a fuel other than natural gas in TiCl<sub>4</sub> vaporizer (VAP-5901) burner, in the O<sub>2</sub> preheater burner (HTR-5902) or in the TiO<sub>2</sub> paste dryer burner (BRN-7508), the permittee shall maintain a record of the type and quantity of fuel burned.
2. The permittee shall perform daily checks of the spray dryer STK-7537 egress, 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:
- the color of the emissions;
  - whether the emissions are representative of normal operations;
  - if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - whether the visible emissions during the observation period were continuous or intermittent; and
  - any corrective actions taken to eliminate the visible emissions.
3. Notwithstanding the frequency of the inspections specified in section A.III.2., the permittee may reduce the frequency for this emissions unit from daily to three days per week if the following conditions are met:
- for one full quarter the permittee's inspections indicate no visible emissions; and
  - the permittee continues to comply with all the record keeping and monitoring requirements specified in section A.III.

The permittee shall revert to daily readings if any visible emissions are observed.

4. The permittee shall collect and record the operating times for the capture (collection) system(s) and the process equipment associated with the Train "B" Finishing Process.
5. 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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.III.1. through A.III.4. 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 that (a) identify all days during which any visible particulate emissions were observed from spray dryer STK-7537 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.

#### IV. Reporting Requirements (continued)

2. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the TiCl<sub>4</sub> vaporizer (VAP-5901) burner, in the O<sub>2</sub> preheater burner (HTR-5902) or in the TiO<sub>2</sub> paste dryer burner (BRN-7508). Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit annual reports that specify the PE rate and the NO<sub>x</sub> 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.
4. 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 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.IV.1. through A.IV.3. 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):

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

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

- 1.b Emission Limitations: 0.020 lb PE/mmBtu from each egress for the TiCl<sub>4</sub> vaporizer (VAP-5901), and the O<sub>2</sub> preheater.

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

$$E(\text{PE}) = EF/HC$$

where:

E\_VAP-5901(PE) = the PE rate from the TiCl<sub>4</sub> vaporizer (VAP-5901), in pounds PE per million Btu of maximum heat input.

E\_HTR-5902(PE) = the PE rate from the O<sub>2</sub> preheater (HTR-5902), 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 per natural gas fuel supplier information.

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 and the procedures specified in OAC rule 3745-17-03(B)(9).

**V. Testing Requirements (continued)**

- 1.c** Emission Limitation: 1.11 lbs/hr PE from the TiO<sub>2</sub> spray dryer (DRY-7510) & burner (BRN-7508) via STK-7537 egress.

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

$$E_{\text{STK-7537(PE)}} = \text{Conc\_PE} \times Q_{\text{ds}} \times 1 \text{ lb PE}/7,000 \text{ grains PE} \times 60 \text{ min/hr.}$$

where:

$$E_{\text{STK-7537(PE)}} = \text{PE rate from the STK-7537 egress, in pounds per hour.}$$

Conc\_PE = maximum PE concentration in exhaust, which was measured to be 0.0029 grain PE/dscf during a U.S. EPA Method 5 stack test conducted on November 15, 2002.

Q<sub>ds</sub> = dry standard exhaust flow rate, which was measured to be 27,364 dscf/min during a U.S. EPA Method 5 stack test conducted on November 15, 2002.

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 and the procedures specified in OAC rule 3745-17-03(B)(10).

- 1.d** Emission Limitation: 4.86 TPY PE from the TiO<sub>2</sub> spray dryer (DRY-7510) & burner (BRN-7508).

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

$$\text{PE\_TOTAL} = [E_{\text{STK-7537(PE)}}] \times \text{HRS/YR} \times 1 \text{ ton}/2000 \text{ lbs.}$$

where:

$$\text{PE\_TOTAL} = \text{the total PE rate from the TiO}_2 \text{ spray dryer (DRY-7510) \& burner (BRN-7508), in tons/year.}$$

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.4., for the calendar year.

## V. Testing Requirements (continued)

- 1.e** Emission Limitation: 4.36 lbs/hr NOx from the fuel combustion operations: TiCl4 vaporizer (VAP-5901), and the O2 preheater (HTR-5902) and spray dryer burner (BRN-7508).

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

- i. Determination of the NOx rate from the TiCl4 vaporizer (VAP-5901) and from the O2 preheater (HTR-5902) may be based on the following equation:

$$E(\text{lbs/hr}) = EF \times \text{mmBtu/hr} \times \text{cf}/1029 \text{ Btu.}$$

where:

E(lbs/hr) = the rate of NOx emissions, in pounds/hour.

EF\_VAP-5901(NOx) = EF\_HTR-5902(NOx) the NOx emissions factor which is 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).

mmBtu\_VAP-5901/hr = the maximum rated heat input capacity of the TiCl4 vaporizer (VAP-5901), 9.5 mmBtu/hr.

mmBtu\_HTR-5902/hr = the maximum rated heat input capacity of the O2 preheater (HTR-5902), 5.9 mmBtu/hr.

- ii. Determination of the NOx rate from the spray dryer burner (BRN-7508) may be based on the following equation:

$$E_{\text{STK-7537}}(\text{NOx}) = \text{Conc\_NOx} \times Q_{\text{ds}} \times 46.01 \text{ grams/mole} \times 1 / (0.84953 \times 453.59 \text{ grams/lb} \times 1,000,000) \times 60 \text{ min/hr.}$$

where:

E\_STK-7537(NOx) = NOx rate from the STK-7537 egress, in pounds per hour.

Conc\_NOx = measured NOx concentration in exhaust, which was 20.7 ppm by volume, dry basis during a U.S. EPA Method 7E stack test conducted on November 15, 2002.

Qds = dry standard exhaust flow rate, which was measured to be 23,523 dscf/min during a U.S. EPA Method 5 stack test conducted on July 27, 1999.

- iii. Determination of total NOx rate:

$$E_{\text{Total NOx}} = E_{\text{VAP-5901}}(\text{NOx}) + E_{\text{HTR-5902}}(\text{NOx}) + E_{\text{STK-7537}}(\text{NOx}).$$

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.

- 1.f** Emission Limitation: 19.1 TPY NOx from the fuel combustion operations: TiCl4 vaporizer (VAP-5901), and the O2 preheater (HTR-5902) and spray dryer burner (BRN-7508).

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

$$\text{NOx\_TOTAL} = \{ [E_{\text{VAP-5901}}(\text{NOx}) + E_{\text{HTR-5902}}(\text{NOx})] \times \text{HRS/YR} \times 1 \text{ ton}/2000 \text{ lbs} \} + \{ [E_{\text{STK-7537}}(\text{NOx})] \times \text{HRS/YR} \times 1 \text{ ton}/2000 \text{ lbs} \}.$$

where:

NOx\_TOTAL = the total NOx rate from fuel combustion operations, in tons/year.

## **V. Testing Requirements (continued)**

2. Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 02-4450, issued on January 18, 1990 and modified on August 4, 1993 and on July 8, 1999: A.V.1.a. through A.V.1.f. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

## **VI. Miscellaneous Requirements**

1. On August 9, 2001, the permittee submitted an application for a PTI (application 02-15582), requesting a revision to its existing PTI to designate the Train "B" Oxidation Process as emissions unit (P010), separate from the Train "B" Finishing Process (P007). Also several years after the issuance of PTI 02-4450, emission factors found in U.S. EPA's AP-42 to estimate air pollutant emissions from natural gas boiler operations were revised to increase the NOx emissions factor. These revised emissions determinations will need to be incorporated in the modified PTI as appropriate. The PTI application is currently being processed by the Ohio EPA; however, as of the effective date of this Title V permit, the final, modified PTI has not been issued. Within 30 days after receipt of the final modified PTI (PTI number 02-15582), the permittee shall submit an application for a modification of this Title V operating permit that shall include emissions limits for Train "B" Oxidation Process as emissions unit (P010) and for Train "B" Finishing Process (P007), as required by PTI 02-15582.

**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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**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:** Dryer (P009)

**Activity Description:** dryer for the ore and coke recovery system (P009).

#### 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Recovery of ore and coke system: including a belt wash, belt filter, 7.0 mmBtu/hr natural gas-fired burner (BNR-5073) with dryer (DRY-5073) and storage silo (SIL-5081) with a bin vent dust collector (COL-5081), and equipped with a venturi scrubber (SBR-5085) and absorber/separator (SEP-5085) to control particulate emissions.	OAC rule 3745-17-07(A)	See section A.I.2.a.
	OAC rule 3745-17-11(A)	See section A.I.2.a.
	OAC rule 3745-21-08	See section A.I.2.b.
	OAC rule 3745-23-06(B)	See section A.I.2.c.
	OAC rule 3745-31-05(A)(3) PTI 02-08565	The visible particulate emissions (PE) shall be limited to 10% opacity, as a 6-minute average. The PE rate shall not exceed 0.99 lb/hr and 4.34 tons/year. The carbon monoxide (CO) emissions shall not exceed 2.30 lbs/hr and 10.1 tons/year. The nitrogen oxide (NOx) emissions shall not exceed 0.82 lb/hr and 3.59 tons/year. The requirements of this rule also includes compliance with the requirements of OAC rule 3745-21-08 and OAC rule 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" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules. On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). When the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" will no longer exist as part of the federally-approved SIP for Ohio, and this term and condition will no longer be applicable to this emissions unit.
- 2.c** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology requirements established in PTI 02-08565.
- 2.d** Because this emissions unit burns only natural gas, there is no applicable SO<sub>2</sub> emissions limitation in OAC Chapter 3745-18.

## **II. Operational Restrictions**

1. The permittee shall employ the absorber/separator (SEP-5085) whenever the emissions unit is in operation.
2. The pressure drop across the venturi scrubber (SBR-5085) shall be maintained within a range of 10 - 20 inches of water or a within the range established during the most recent emissions test that demonstrated that the emissions unit was in compliance, except during startup, shutdown or calibration periods.

## **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 (COL-5081). 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 of the emissions;
  - b. the color of the emissions;
  - c. whether the emissions are representative of normal operations;
  - d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - e. the total duration of any visible emission incident; and
  - f. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall maintain daily records that document any time periods when the absorber/separator (SEP-5085) were not in service when the emissions unit was in operation.
3. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the venturi scrubber (SBR-5085) while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the venturi scrubber on a once/12-hour basis.
4. The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

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

5. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.

6. 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 02-08565, issued on September 5, 2002: A.III.1. through A.III.5. 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 (COL-5081); 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. The permittee shall notify the Northeast District Office in writing of any daily record showing that the absorber/separator (SEP-5085) was not in service when the emissions unit was in operation. 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.
3. The permittee shall submit quarterly deviation (excursion) reports that include an identification of each recorded reading during which the pressure drop across the venturi scrubber (SBR-5085) did not comply with the allowable range specified in Section A.II.2.
4. The permittee shall submit annual reports which specify the emissions of particulates, CO, and NO<sub>x</sub> 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. 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 02-08565, issued on September 5, 2002: A.IV.1. through A.IV.4. 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):
  - 1.a Emission Limitation: 10% opacity of visible particulate emissions (PE), as a 6-minute average.

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

## V. Testing Requirements (continued)

- 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 (COL-5081) may be based on the following calculation:

$$PE (COL-5081) = Q \times PE_{conc.} \times 1 \text{ lb PE}/7000 \text{ grains PE} \times 60 \text{ min/hr.}$$

where:

PE (COL-5081) = the PE rate from the bin vent dust collector (COL-5081), in lbs/hr.

Q = maximum exhaust rate, which is 1400 dscf/min from the manufacturer specifications.

PE<sub>conc.</sub> = the maximum particulate concentration in the exhaust, which is 0.008 grain PE/dscf per manufacturer specifications.

- ii. The measured PE rate, PE(SEP-5085), from the absorber/separator (SEP-5085) egress was determined to be 0.66 lb/hr via U.S. EPA Methods 1-5 tests conducted on February 25, 2002. 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), may be based upon the following calculation:

$$E(T) = E(COL-5081) + E(SEP-5085).$$

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: 2.30 lbs/hr CO from the absorber/separator (SEP-5085) egress.

Applicable Compliance Method: The measured CO rate from the absorber/separator (SEP-5085) egress was determined to be 0.15 lb/hr via U.S. EPA Methods 1-4 and U.S. EPA Method 10 tests conducted on February 25, 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).

- 1.d** Emission Limitation: 0.82 lb/hr NO<sub>x</sub> from the absorber/separator (SEP-5085) egress.

Applicable Compliance Method: The measured NO<sub>x</sub> rate from the absorber/separator (SEP-5085) egress was determined to be 0.45 lb/hr via U.S. EPA Methods 1-4 and U.S. EPA Method 7E tests conducted on February 25, 2002. The measured NO<sub>x</sub> 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).

**V. Testing Requirements (continued)**

- 1.e** Emission Limitation(s): 4.34 TPY PE, 10.1 TPY CO and 3.59 TPY NOx.

Applicable Compliance Method(s): To determine the annual rate for PE, the actual, hourly, emission rate as determined in sections A.V.1.b., A.V.1.c. and 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.4., and divided by 2000 lbs/ton.

- 2.** Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 02-08565, issued on September 5, 2002: A.V.1.a. through A.V.1.e. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

**VI. Miscellaneous Requirements**

**None**

**B. State Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>Recovery of ore and coke system: including a belt wash, belt filter, 7.0 mmBtu/hr natural gas-fired burner (BNR-5073) with dryer (DRY-5073) and storage silo (SIL-5081) with a bin vent dust collector (COL-5081), and equipped with a venturi scrubber (SBR-5085) and absorber/separator (SEP-5085) to control particulate emissions.</p>		

**2. Additional Terms and Conditions**

None

**II. Operational Restrictions**

None

**III. Monitoring and/or Record Keeping Requirements**

- Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because air toxic compounds or criteria pollutants 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.

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Oxygen Preheater and TiCl4 Vaporizer Train A (P011)  
**Activity Description:** Natural gas fired oxygen preheater A (HTR-1902) and natural gas fired TiCl4 Vaporizer A (VAP-1901).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Train "A" Oxidation process: including an aluminum chloride generator (GEN-1903), an oxidation reactor (REA-1921) with a paire filter product capture device (FLT-1935), a flue pond (HEX-1924) and a slurry tank (TNK-1940).		
14.6 mmBtu/hr natural gas-fired titanium tetrachloride (TiCl4) vaporizer (VAP-1901).	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 provided by rule.
	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	See section A.I.2.b.
	OAC rule 3745-23-06(B)	See section A.I.2.c.
	OAC rule 3745-31-05(A)(3) PTI 02-16029	The carbon monoxide (CO) emissions shall not exceed 1.19 lbs/hr. The nitrogen oxides (NOx) emissions shall not exceed 1.42 lbs/hr. The organic compound (OC) emissions shall not exceed 0.16 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-10(B)(1), OAC rule 3745-21-08 and 3745-23-06(B).
7 mmBtu/hr natural gas-fired oxygen (O2) preheater (HTR-1902)	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 provided by rule.
	OAC rule 3745-17-10(B)(1)	The PE rate shall not exceed 0.020 lb/mmBtu of actual heat input.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
	OAC rule 3745-21-08	See section A.I.2.b.
	OAC rule 3745-23-06(B) OAC rule 3745-31-05(A)(3) PTI 02-16029	See section A.I.2.c. The CO emissions shall not exceed 0.57 lb/hr. The NOx emissions shall not exceed 0.68 lb/hr. The OC emissions shall not exceed 0.08 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-10(B)(1), 3745-21-08 and 3745-23-06(B).
All egress points.	OAC rule 3745-31-05(A)(3) PTI 02-16029	The PE rate shall not exceed 1.89 tons/year. The CO rate shall not exceed 7.72 tons/year. The NOx rate shall not exceed 9.19 tons/year. The OC rate shall not exceed 1.01 tons/year.

**2. Additional Terms and Conditions**

- 2.a** Exhaust gases from the paire filter (FLT-1935) product capture device, serving the oxidation reactor, are routed to the Train "A" Chlorination Process (P001) instead of the atmosphere. Also, during startup, shutdown or equipment pressure testing, nitrogen or oxygen is used to warm or purge the oxygen preheater (HTR-1902), so no air contaminant emissions are generated when the paire filter gases are exhausted to the atmosphere.
- 2.b** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B) by complying with all applicable rules. On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). When the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" will no longer exist as part of the federally-approved SIP for Ohio, and this term and condition will no longer be applicable to this emissions unit.
- 2.c** The permittee has satisfied the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06 by committing to comply with the best available technology requirements established in PTI 02-16029.
- 2.d** Because this emissions unit burns only natural gas, there is no applicable SO2 emissions limitation in OAC Chapter 3745-18.

**II. Operational Restrictions**

- 1. The permittee shall burn only natural gas in the TiCl4 vaporizer (VAP-1901) burner and in the O2 preheater burner (HTR-1902).

**III. Monitoring and/or Record Keeping Requirements**

- 1. For each day during which the permittee burns a fuel other than natural gas in TiCl4 vaporizer (VAP-1901) burner or in the O2 preheater burner (HTR-1902), the permittee shall maintain a record of the type and quantity of fuel burned.

### 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 egresses (STK-1901 and STK-1902) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the location and color of the emissions;
  - b. 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. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
3. The permittee shall maintain daily records of the number of hours of operation of this emissions unit.
4. Notwithstanding the frequency of the inspections specified in section A.III.2, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.

5. 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 02-16029, issued on January 7, 2003: A.III.1. through A.III.4. 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 deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the TiCl<sub>4</sub> vaporizer (VAP-1901) burner or in the O<sub>2</sub> preheater burner (HTR-1902). Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack egresses (STK-1901 and STK-1902) serving this emissions unit 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.
3. The permittee shall submit annual reports that specify the PE rate and the CO, NO<sub>x</sub> 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.
4. 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 02-16029, issued on January 7, 2003: A.IV.1. through A.IV.3. 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):

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

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

- 1.b Emission Limitation: 0.020 lb PE/mmBtu from each egress for the TiCl4 vaporizer (VAP-1901) and for the O2 preheater (HTR-1902).

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

$$E\_VAP1901(PE) = E\_HTR1902(PE) = EF/HC.$$

where:

$E\_VAP1901(PE)$  = the PE rate from the TiCl4 vaporizer (VAP-1901), in pounds PE per million Btu of maximum heat input.

$E\_HTR1902(PE)$  = the PE rate from the O2 preheater (HTR-1902), 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 02-16029.

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 and the procedures specified in OAC rule 3745-17-03(B)(9).

- 1.c Emission Limitation: 1.89 TPY PE from all egress points.

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

$$PE\_TOTAL = [(E\_VAP1901(PE) \times mmBtu\_VAP1901/hr) + (E\_HTR1902(PE) \times mmBtu\_HTR1902/hr)] \times HRS/YR \times 1 \text{ ton PE}/2000 \text{ lbs PE}.$$

where:

PE\_TOTAL = the total PE rate from all egress points, in tons/year.

mmBtu\_VAP1901/hr = the maximum rated heat input capacity of the TiCl4 vaporizer (VAP-1901), which is 14.6 mmBtu/hr as specified in the application for PTI 02-16029.

mmBtu\_HTR1902/hr = the maximum rated heat input capacity of the O2 preheater (HTR-1902), which is 7 mmBtu/hr as specified in the application for PTI 02-16029.

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.3, for the calendar year.

## V. Testing Requirements (continued)

- 1.d** Emission Limitations: 1.19 lbs CO/hr from the TiCl<sub>4</sub> vaporizer (VA9-1901) egress and 0.57 lb CO/hr from the O<sub>2</sub> preheater (HTR-1902) egress.

1.42 lbs NO<sub>x</sub>/hr from the TiCl<sub>4</sub> vaporizer (VA9-1901) egress and 0.68 lb NO<sub>x</sub>/hr from the O<sub>2</sub> preheater (HTR-1902) egress.

0.16 lb OC/hr from the TiCl<sub>4</sub> vaporizer (VAP-1901) egress and 0.08 lb OC/hr from the O<sub>2</sub> preheater (HTR-1902) egress.

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

$$E(\text{lbs/hr}) = EF \times \text{mmBtu/hr} \times \text{cf}/1029 \text{ Btu.}$$

where:

E(lbs/hr) = the rate of CO, NO<sub>x</sub> or OC emissions, in pounds/hour.

EF(CO) = the CO emissions factor, 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(NO<sub>x</sub>) = the NO<sub>x</sub> emissions factor, 100 pounds of NO<sub>x</sub> 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(OC) = 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).

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 NO<sub>x</sub> 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.

- 1.e** Emission Limitations: 7.72 TPY CO, 9.19 TPY NO<sub>x</sub> and 1.01 TPY OC emissions from all egress points.

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

$$E(\text{TPY}) = (E_{\text{VAP1901}} + E_{\text{HTR1902}}) \times \text{HRS/YR} \times 1 \text{ ton}/2,000 \text{ lbs.}$$

where:

E(TPY) = the rate of CO, NO<sub>x</sub> or OC emissions, in tons/year.

E\_VAP1901 = the CO, NO<sub>x</sub> or OC emissions rate from the TiCl<sub>4</sub> vaporizer (VAP-1901), in pound(s) per hour, as specified in section A.V.1.d.

E\_HTR1902 = the CO, NO<sub>x</sub> or OC emissions rate from the O<sub>2</sub> preheater (HTR-1902), in pound(s) per hour, as specified in section A.V.1.d.

- 2.** Pursuant to OAC Rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 02-16029, issued on January 7, 2003: A.V.1.a. through A.V.1.e. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

## VI. Miscellaneous Requirements

- 1.** Newly designated emissions unit, P011, was previously associated with the Train "A" Finishing Process (P002).

## 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Train "A" Oxidation process: including an aluminum chloride generator (GEN-1903), an oxidation reactor (REA-1921) with a pair filter product capture device (FLT-1935), a flue pond (HEX-1924) and a slurry tank (TNK-1940), a 14.6 mmBtu/hr natural gas-fired titanium tetrachloride (TiCl4) vaporizer (VAP-1901) and 7 mmBtu/hr natural gas-fired oxygen (O2) preheater (HTR-1902).		

### 2. Additional Terms and Conditions

None

### II. Operational Restrictions

None

### III. Monitoring and/or Record Keeping Requirements

1. 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, respectively. 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.

### IV. Reporting Requirements

None

### V. Testing Requirements

None

### VI. Miscellaneous Requirements

None

### Part III - Terms and Conditions for Emissions Units

**Emissions Unit ID:** Coke and Ore Unloading, Storage, and Handling (P901)

**Activity Description:** Coke and ore storage and feed system (P901).

#### A. State and Federally Enforceable Section

##### I. Applicable Emissions Limitations and/or Control Requirements

- 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Ore & coke unloading, storage and handling operations: Train "A" underground coke/ore unloading hopper (HOP-1021) and the bucket elevator (ELV-1001) both having fugitive egress points; and	OAC rule 3745-17-07(B)(1)	The requirements of this rule are less stringent than the requirements of OAC rule 3745-17-08(B).
Train "B" underground coke/ore unloading hopper (HOP-5000) and the bucket elevator (ELV-5000) both having fugitive egress points.	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.
Train "A" ore storage bin (BIN-1010), coke storage bin (BIN-1020), ore blow pot (BPT-1011), coke blow pot (BPT-1021) with train "A" baghouse collector (COL-1060) venting through train "A" stack egress point; and	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from any fugitive egress shall not exceed 20% opacity as a 6-minute average, except as specified by rule.
Train "B" ore storage bin (BIN-5010), coke storage bin (BIN-5020), ore blow pot (BPT-5011), coke blow pot (BPT-5021) with B baghouse collector (COL-5030) venting through train "B" stack egress point.	OAC rule 3745-17-11	The total PE rate shall not exceed 32.0 lbs/hour from all stack egresses. See section A.I.2.e.

## 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:

truck load-out of ore and coke into train "A" underground unloading hopper (HOP-1021) - total enclosure

truck load-out of ore and coke into train "B" underground unloading hopper (HOP-5000) - total enclosure

materials load-out operations from indoor storage piles and load-in operations to each feed hopper - total enclosure

conveyors for train "A": bucket elevator (ELV-1001) from ore storage bins to ore blow pots and from coke storage bins to coke blow pots.

conveyors for train "B": bucket elevator (ELV-5000) from ore storage bins to ore blow pots and from coke storage bins to coke blow pots.

transfer points: bucket elevators (ELV-1001 and ELV-5000) to loading/unloading stations and other transfer points.

ore storage bin A (BIN-1010), ore blow pot A (BPT-1011), and coke storage bin A (BIN-1020) and coke blow pot A (BPT-1021).

ore storage bin B (BIN-5010), ore blow pot B (BPT-5011), and coke storage bin B (BIN-5020) and coke blow pot B (BPT-5021).

- 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)

truck load-out of ore and coke into train "A" underground unloading hopper (HOP-1021) - total enclosure

truck load-out of ore and coke into train "B" underground unloading hopper (HOP-5000) - total enclosure

materials load-out operations from indoor storage piles and load-in to each feed hopper - total enclosure

bucket elevators (ELV-1001 and ELV-5000) on train "A" and train "B", respectively - total enclosures

transfer points: bucket elevators (ELV-1001 and ELV-5000) to loading/unloading stations and other transfer points - total enclosures

There shall be no visible emissions of fugitive dust from the total enclosures.

- 2.c** The above-identified control measures shall be implemented at all times during normal operations to ensure compliance with the above-mentioned control requirements and visible emission limitations. Whenever train A baghouse P901COL1060 is down for maintenance the train A exhaust gases from ore blow pot A (BPT-1011) and coke blow pot A (BPT-1021) shall be routed to train B baghouse P901COL5030 instead. Likewise, whenever train B baghouse P901COL5030 is down for maintenance the train B exhaust gases from ore blow pot B (BPT-5011) and coke blow pot B (BPT-5021) shall be routed to train A baghouse P901COL1060 instead.

- 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.

## 2. Additional Terms and Conditions (continued)

- 2.e** The following operations are vented to an particulate emissions control device and/or vented through a stack and are therefore subject to OAC rule 3745-17-11:

ore storage bin A (BIN-1010) ore blow pot A (BPT-1011) and coke storage bin A (BIN-1020) and coke blow pot A (BPT-1021) - exhaust gases are directed to train A baghouse P901COL1060.

ore storage bin B (BIN-5010) ore blow pot B (BPT-5011) and coke storage bin B (BIN-5020) and coke blow pot B (BPT-5021) - exhaust gases are directed to train B baghouse P901COL5030.

The allowable, hourly PE rate is based on Table I of OAC rule 3745-17-11, which is more stringent than the allowable PE rate using curve P-1 within Figure II (based on the uncontrolled mass rate of emissions) of OAC rule 3745-17-11.

## II. Operational Restrictions

1. The permittee shall employ train A baghouse P901COL1060 whenever material transfer occurs at the following locations to control the particulate emissions from these locations:
  - a. ore storage bin A (BIN-1010) and coke storage bin A (BIN-1020);
  - b. from ore storage bin A (BIN-1010) to ore blow pot A (BPT-1011) and from coke storage bin A (BIN-1020) to coke blow pot A (BPT-1021);
  - c. from ore blow pot A (BPT-1011) and coke blow pot A (BPT-1021) to a chlorinator (CHL-1202 or CHL-5203) at (P001) train "A" Chlorination Process; and
  - d. from ore blow pot B (BPT-5011) and coke blow pot B (BPT-5021) whenever train B baghouse P901COL5030 is down for maintenance.
2. The permittee shall employ train B baghouse P901COL5030 whenever material transfer occurs at the following locations to control the particulate emissions from these locations:
  - a. ore storage bin B (BIN-5010) and coke storage bin A (BIN-1020);
  - b. from ore storage bin B (BIN-5010) to ore blow pot B (BPT-5011) and from coke storage bin B (BIN-5020) to coke blow pot B (BPT-5021);
  - c. from ore blow pot B (BPT-5011) and coke blow pot B (BPT-5021) to a chlorinator (CHL-5201 or CHL-5203) at (P006) train "B" Chlorination Process; and
  - d. from ore blow pot A (BPT-1011) and coke blow pot A (BPT-1021) whenever train A baghouse P901COL1060 is down for maintenance.

### 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 emissions of fugitive dust from the total enclosures and for any visible particulate emissions from the train A baghouse P901COL1060 stack egress and the train B baghouse P901COL5030 stack egress. 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 eliminate the visible emissions.
2. The permittee shall maintain daily records that document any time periods when train A baghouse P901COL1060 was not in service as required in section A.II.1.
3. The permittee shall maintain daily records that document any time periods when train B baghouse P901COL5030 was not in service as required in section A.II.2.
4. Notwithstanding the frequency of the inspections specified in section A.III.1, the permittee may reduce the frequency for this emissions unit from daily to three days per week 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 daily readings if any visible emissions are observed.

### 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 total enclosures, from the train A baghouse P901COL1060 stack egress and/or the train B baghouse P901COL5030 stack 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. 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. train A baghouse P901COL1060 as required in section A.II.1.; and
  - b. train B baghouse P901COL5030 as required in section A.II.2.

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):

## V. Testing Requirements (continued)

- 1.a** Emission Limitation: 20% opacity of visible PE, as a 3-minute average from fugitive egress points.

Applicable Compliance Method: If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 22, and the procedures specified in OAC rule 3745-17-03(B)(3).

- 1.b** Emission Limitation: 20% opacity of visible PE, as a 6-minute average from stack egress points.

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

- 1.c** Emission Limitation: 32.0 lbs/hr PE from all stack egress points.

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

$$E(S) = [(Conc\_PEa \times Qa) + (Conc\_PEb \times Qb)] \times 1 \text{ lb PE}/7000 \text{ grains PE} \times 60 \text{ min/hr.}$$

where:

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

Conc\_PEA = Conc\_PEB = maximum concentration of PE in train A baghouse P901COL1060 exhaust and in train B baghouse P901COL5030, which are 0.02 grains PE/dscf, per manufacturer guarantee noted in a July 22, 2002 letter from the permittee.

Qa = Qb = exhaust flow rate of train A baghouse P901COL1060 and of train B baghouse P901COL5030, which is 1831 dscfm as noted in the July 22, 2002 letter.

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 and the procedures specified in OAC rule 3745-17-03(B)(10).

## 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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/ Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
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**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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