



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

9/27/2013

Gerald Stewart
AUSTIN POWDER COMPANY
430 Powder Plant Rd
McArthur, OH 45651

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 0682000000
Permit Number: P0113995
Permit Type: Initial Installation
County: Vinton

Certified Mail

No	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
Yes	MODELING SUBMITTED
No	SYNTHETIC MINOR TO AVOID TITLE V
No	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**

How to appeal this permit

The issuance of this PTIO is a final action of the Director 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

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 Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

If you have any questions, please contact Ohio EPA DAPC, Southeast District Office at (740)385-8501 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael W. Ahern, Manager

Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-SEDO



FINAL

**Division of Air Pollution Control
Permit-to-Install and Operate
for
AUSTIN POWDER COMPANY**

Facility ID:	0682000000
Permit Number:	P0113995
Permit Type:	Initial Installation
Issued:	9/27/2013
Effective:	9/27/2013
Expiration:	5/23/2023



Division of Air Pollution Control
Permit-to-Install and Operate
for
AUSTIN POWDER COMPANY

Table of Contents

Authorization	1
A. Standard Terms and Conditions	3
1. What does this permit-to-install and operate ("PTIO") allow me to do?.....	4
2. Who is responsible for complying with this permit?	4
3. What records must I keep under this permit?	4
4. What are my permit fees and when do I pay them?.....	4
5. When does my PTIO expire, and when do I need to submit my renewal application?	4
6. What happens to this permit if my project is delayed or I do not install or modify my source?	5
7. What reports must I submit under this permit?	5
8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?	5
9. What are my obligations when I perform scheduled maintenance on air pollution control equipment? ...	5
10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?	6
11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?	6
12. What happens if one or more emissions units operated under this permit is/are shut down permanently?	6
13. Can I transfer this permit to a new owner or operator?.....	7
14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?	7
15. What happens if a portion of this permit is determined to be invalid?	7
B. Facility-Wide Terms and Conditions.....	8
C. Emissions Unit Terms and Conditions	10
1. P001, Acetone Recovery System.....	11
2. P002, Nitric Acid Recovery System.....	18
3. P003, Nitration Air Vent.....	24



Final Permit-to-Install and Operate
 AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

Authorization

Facility ID: 0682000000
 Application Number(s): A0047398, A0048341
 Permit Number: P0113995
 Permit Description: First-issue PTIO for P001 (Acetone Recovery System controlled by activated carbon beds with a recovery efficiency of 98% for OC), P002 (Nitric Acid Recovery System including a NOx absorber with a recovery efficiency of 99.6% and all process vessels and equipment, pumps, and related appurtenances associated with the process) and P003 (PETN Nitration Process).
 Permit Type: Initial Installation
 Permit Fee: \$600.00
 Issue Date: 9/27/2013
 Effective Date: 9/27/2013
 Expiration Date: 5/23/2023
 Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

AUSTIN POWDER COMPANY
 430 Powder Plant Rd
 McArthur, OH 45651

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

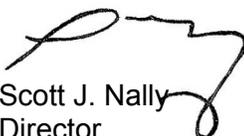
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Southeast District Office
 2195 Front Street
 Logan, OH 43138
 (740)385-8501

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


 Scott J. Nally
 Director



Authorization (continued)

Permit Number: P0113995

Permit Description: First-issue PTIO for P001 (Acetone Recovery System controlled by activated carbon beds with a recovery efficiency of 98% for OC), P002 (Nitric Acid Recovery System including a NOx absorber with a recovery efficiency of 99.6% and all process vessels and equipment, pumps, and related appurtenances associated with the process) and P003 (PETN Nitration Process).

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P001
Company Equipment ID:	Acetone Recovery System
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P002
Company Equipment ID:	Nitric Acid Recovery System
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P003
Company Equipment ID:	Nitration Air Vent
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Final Permit-to-Install and Operate
AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

A. Standard Terms and Conditions



1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is



very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.



10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Ohio EPA DAPC, Southeast District Office in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit 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.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting¹ a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

¹Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).



13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.



Final Permit-to-Install and Operate
AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

B. Facility-Wide Terms and Conditions



Final Permit-to-Install and Operate
AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
 - b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (1) None.



Final Permit-to-Install and Operate
AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

C. Emissions Unit Terms and Conditions



1. P001, Acetone Recovery System

Operations, Property and/or Equipment Description:

Acetone Recovery System associated with the pentaerythritoltetranitrate (PETN) production unit, which includes activated carbon beds with a recovery efficiency of 98% for OC.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. None.

b) **Applicable Emissions Limitations and/or Control Requirements**

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Organic Compounds (OCs) shall not exceed 10.2 tons per rolling, 12-month period. See b)(2)a. below.

(2) **Additional Terms and Conditions**

a. This emissions unit shall receive the OC emissions from the PETN production unit. The acetone recovery system shall operate with an OC recovery efficiency of 98% and shall meet the operational, monitoring and recordkeeping requirements of this permit, when the emissions unit is in operation.

c) **Operational Restrictions**

(1) This emissions unit shall be operated at all times the PETN production unit is in operation.



d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain records of the following information:

- a. the rolling, 12-month summation of the total amount of acetone recovered, in tons, calculated by adding the current month's acetone recovered to the acetone recovered for the preceding eleven calendar months;
- b. the rolling, 12-month summation of OC emissions for the emissions unit; and
- c. any time this emissions unit is not in operation when the PETN production unit is in operation.

(2) Any time the emissions unit is not in operation when the PETN production unit is in operation, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

- a. the date and time the deviation began;
- b. the magnitude of the deviation at that time;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the emissions unit back into compliance, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.



- (3) In order to maintain compliance with the applicable emissions limitation contained in this permit, the acceptable temperature of the carbon bed, after regeneration [including any cooling cycle(s)], shall not exceed the maximum temperature (in degrees Celsius) specified for any regeneration cycle in the manufacturer's recommendations, instructions and the operating manual.
- (4) Whenever the monitored carbon bed temperature deviates from the range/limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the carbon bed temperature readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The carbon bed temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions of the permitted carbon bed temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable OC emission rate for this emissions unit. In addition, approved revisions to the carbon bed



temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

- (5) In order to maintain compliance with the applicable emissions limitation and the specified recovery efficiency contained in this permit, the permittee shall conduct periodic checks of the OC concentration from the emissions unit outlet by use of a concentration monitor and compare the concentration to the manufacturer's recommendations, instructions and the operating manual. The periodic checks shall be conducted in the following manner:
- a. for the first fifteen (15) days of operation once during every cycle;
 - b. for the following thirty (30) days of operation once during every day while the emissions unit is in operation;
 - c. after the first forty-five (45) days of operation once a week while the emissions unit is in operation.
- (6) Whenever the monitored OC concentration deviates from the manufacturer-recommended level above which indicates that breakthrough would be likely to occur, as established by the manufacturer's recommendations, instructions and the operating manual, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;



- j. the OC concentration reading immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The manufacturer's OC concentration levels, associated monitoring requirement, and operating procedures are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions of the permitted manufacturer's OC concentration levels, associated monitoring requirement, and operating procedures based upon information obtained during future performance tests that demonstrate compliance with the allowable OC emission rate for this/these emissions unit(s). In addition, approved revisions to the manufacturer's OC concentration levels, associated monitoring requirement, and operating procedures will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the carbon adsorber during the 12-month reporting period for this/these emissions unit(s):
 - a. periodic checks of the OC concentrations from the emissions unit outlet were not performed as required by this permit or the monitored concentrations exceeded the manufacturer's recommended value above which indicates that breakthrough would be likely occur;
 - b. any period of time (start time and date, and end time and date) when the carbon bed temperature deviated from the range/operating condition established in accordance with this permit;
 - c. any period of time (start time and date, and end time and date) when this emissions unit is not in operation when the PETN production unit is in operation or the emissions unit) was in operation and the process emissions were not vented to the carbon adsorber;



- d. each incident of deviation described in “a”, “b” or “c” (above) where a prompt investigation was not conducted;
- e. each incident of deviation described in “a”, “b” or “c” where prompt corrective action, that would bring the emissions unit into compliance and/or the temperature of the carbon bed (after regeneration) into compliance with the acceptable range, was determined to be necessary and was not take; and
- f. each incident of deviation described in “a”, “b” or “c” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

- a. Emissions Limitation:

OCs shall not exceed 10.2 tons per rolling, 12-month period.

Applicable Compliance Method:

The annual emissions limit was established based upon the following emissions calculation:

Emissions (lb/hr) = (acetone loading, lb/hr) * (worst case operation factor) * (1-adsorber efficiency)

Emissions (ton/yr) = (emissions, lb/hr) * 8,760 hr/yr / (2,000 lb/ton)

Where:

Acetone Loading (based on mass balance per SSOE):

Crystallization process acetonic vent air stream (B5) = 17.36 lb/hr

Crystallization building acetonic waste air stream (B6) = 51.76 lb/hr

Concentrated acetone vapor to recovery stream = 13.41 lb/hr

Dilute acetone vapor to recovery stream: 14.54 lb/hr

Total Acetone Loading: 97.07

Worst Case Operation Factor: 1.2

Carbon Adsorber Capture Efficiency: 98%



Final Permit-to-Install and Operate
AUSTIN POWDER COMPANY
Permit Number: P0113995
Facility ID: 0682000000
Effective Date: 9/27/2013

Therefore:

$$\text{Emissions (lb/hr)} = 97.07 \text{ lb/hr} * 1.2 * (1-0.98) = 2.33 \text{ lb/hr}$$

$$\text{Emissions (ton/yr)} = (2.33 \text{ lb/hr} * 8,760 \text{ hr/yr}) / 2,000 \text{ lb/ton} = 10.2 \text{ ton/yr}$$

g) Miscellaneous Requirements

(1) None.



2. P002, Nitric Acid Recovery System

Operations, Property and/or Equipment Description:

Nitric Acid Recovery System associated with PETN production unit, which includes a NO_x absorber with a recovery efficiency of 99.6% for NO_x and all process vessels and equipment, pumps, and related appurtenances associated with the process.

- a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).
 - (1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - a. None.
 - (2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - a. None.
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T)	Carbon monoxide (CO) emissions shall not exceed 20.0 tons per rolling, 12-month period.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen Oxide (NO _x) shall not exceed 0.09 lb/hr and 0.4 ton per year. See b)(2)a below.
c.	OAC rule 3745-31-05(C), as effective 12/06/2006	See b)(2)b below.



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

Permit to Install and Operate P0113995 for this air contaminant source takes into account the following voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3):

- i. NO_x shall not exceed 0.4 ton per year; and
 - ii. the NO_x absorber shall be operated to achieve 99.6% recovery efficiency of NO_x.
- c. All of the NO_x vent streams from PETN production and storage shall be vented to the nitric acid recovery system with a minimum recovery efficiency of 99.6% that shall meet the operational, monitoring, and recordkeeping requirements of this permit, when the emissions unit is in operation.

c) Operational Restrictions

- (1) This emissions unit shall be operated at all times the PETN production unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain records of the following information:
 - a. the rolling, 12-month summation of the total amount of nitric acid recovered, in tons, calculated by adding the current month's nitric acid recovered to the nitric acid recovered for the preceding eleven calendar months;
 - b. the rolling, 12-month summation of CO emissions for the emissions unit; and
 - c. any time the PETN production unit is operating and the NO_x vent stream from the PETN production and storage is not vented to the nitric acid recovery system



with a minimum recovery efficiency of 99.6% and/or the nitric acid recovery system does not meet the operational, monitoring, and recordkeeping requirements of this permit.

- (2) Any time the situation identified in paragraph d)(1)c. above occurs, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
 - b. the magnitude of the deviation at that time;
 - c. the date the investigation was conducted;
 - d. the name(s) of the personnel who conducted the investigation; and
 - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the emissions unit back into compliance, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

- (3) In order to maintain compliance with the applicable emissions limitation contained in this permit, the permittee shall continuously monitor the pressure within the absorber column while NO_x streams are being vented to the absorber. The absorber shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manual.
- (4) Whenever the absorber column pressure falls below the set-point triggering the low pressure alarm while NO_x streams are being vented to the absorber, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:



- a. the date and time the pressure fell below the set-point triggering the low pressure alarm;
- b. the estimated quantity of NO_x vented to the absorber while the pressure fell below the set-point;
- c. the date the investigation was conducted;
- d. the name(s) of the personnel who conducted the investigation; and
- e. the findings and recommendations;

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the absorber column pressure control valve position immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

e) Reporting Requirements

- (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA's "e-Business Center: Air Services" although PERs can be submitted via U.S. postal service or can be hand delivered.
- (2) The permittee shall identify in the annual permit evaluation report the following information concerning the operations of the absorber during the 12-month reporting period for this/these emissions unit(s):



- a. any period of time (start time and date, and end time and date) emissions from the PETN production and storage is not vented to the nitric acid recovery system with a minimum recovery efficiency of 99.6% and/or the nitric acid recovery system does not meet the operational, monitoring, and recordkeeping requirements of this permit;
- b. any period of time (start time and date, and end time and date) when the emissions unit's absorber column falls below the set-point triggering the low pressure alarm while NO_x streams are being vented to the absorber;
- c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;
- d. each incident of deviation described in "a" or "b" where prompt corrective action was not taken, that would bring the emissions unit into compliance and/or the bring the operation of the control equipment within the acceptable pressure range/limit specified in this permit; and
- e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

CO emissions shall not exceed 20.0 tons per rolling, 12-month period.

Applicable Compliance Method:

The annual emissions limitation was established based upon the following emissions calculation:

Emissions (lb/hr) = (CO loading, lb/hr) * (worst case operation factor)

Emissions (ton/yr) = (emissions, lb/hr) * 8,760 hr/yr / (2,000 lb/ton)

Where:

CO Loading (based on mass balance per SSOE):

Waste air to the absorber stream = 3.8 lb/hr

Worst Case Operation Factor (20% above max. operating expressed in decimal form): 1.2



Therefore:

$$\text{Emissions (lb/hr)} = 3.8 \text{ lb/hr} * 1.2 = 4.56 \text{ lb/hr}$$

$$\text{Emissions (ton/yr)} = (4.56 \text{ lb/hr} * 8,760 \text{ hr/yr}) / 2,000 \text{ lb/ton} = 20.0 \text{ ton/yr}$$

If required, carbon monoxide emissions shall be determined according to test Methods 1 - 4, and 10 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

b. Emissions Limitation:

NO_x shall not exceed 0.09 lb/hr and 0.4 ton per year.

Applicable Compliance Method:

The emissions limitations were established based upon the following emissions calculation:

$$\text{Emissions (lb/hr)} = (\text{NO}_x \text{ loading, lb/hr}) * (\text{worst case operation factor}) * (1 - \text{NO}_x \text{ absorber efficiency})$$

$$\text{Emissions (ton/yr)} = (\text{emissions, lb/hr}) * 8,760 \text{ hr/yr} / (2,000 \text{ lb/ton})$$

Where:

NO_x Loading (based on mass balance per SSOE):

$$\text{Waste air to the absorber stream} = 18.26 \text{ lb/hr}$$

Worst Case Operation Factor (20% above max. operating expressed in decimal form): 1.2

NO_x Absorber Capture Efficiency: 99.6%

Therefore:

$$\text{Emissions (lb/hr)} = 18.26 \text{ lb/hr} * 1.2 * (1 - 0.996) = 0.09 \text{ lb/hr}$$

$$\text{Emissions (ton/yr)} = (0.09 \text{ lb/hr} * 8760 \text{ hr/yr}) / 2,000 \text{ lb/ton} = 0.4 \text{ ton/yr}$$

If required, nitrogen oxide emissions shall be determined according to test Methods 1 - 4, and 7 as set forth in the "Appendix on Test Methods" in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources". Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA, Southeast District Office.

g) Miscellaneous Requirements

- (1) None.



3. P003, Nitration Air Vent

Operations, Property and/or Equipment Description:

PETN Nitration Process which includes all process vessels and equipment, pumps, and related appurtenances associated with the process

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. d)(2)-d)5), e)(3).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001	Nitrogen Oxide (NO _x) shall not exceed 0.53 lb/hr and 2.3 tons per year; Particulate Emissions (PE) shall not exceed 0.03 lb/hr and 0.13 ton per year. Visible PE from this emissions unit shall not exceed 10% opacity, as a 6-minute average. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006	See b.)(2)b. below.



(2) Additional Terms and Conditions

- a. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.
- b. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the SIP.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x and PE emissions from this air contaminant source since the uncontrolled potential to emit for NO_x and PE is less than 10 tons/yr.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping 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. the total duration of any visible emissions incident; and
 - e. any corrective actions taken to eliminate the visible emissions.
- (2) The P0113995 application for this emissions unit, P003, was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule



3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "24" hours per day and "7" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: Nitric Acid

TLV (mg/m3): 5.16

Maximum Hourly Emission Rate (lbs/hr): 0.55

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 49.97

MAGLC (ug/m3): 122.86



The permittee, has demonstrated that emissions of nitric acid, from emissions unit P003, is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (3) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:
- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
 - c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (4) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);



- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.
 - (5) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the “Toxic Air Contaminant Statute”, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- e) Reporting Requirements
 - (1) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA District Office or Local Air Agency by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit. It is recommended that the PER is submitted electronically through the Ohio EPA’s “e-Business Center: Air Services” although PERs can be submitted via U.S. postal service or can be hand delivered.
 - (2) The permittee shall identify the following information in the annual permit evaluation report in accordance with the monitoring requirements for visible emissions in term number d)(1) above:
 - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit; and
 - b. any corrective actions taken to eliminate the visible particulate emissions.
 - (3) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.
- f) Testing Requirements
 - (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:



a. Emissions Limitation:

NO_x shall not exceed 0.53 lb/hr and 2.3 tons per year.

Applicable Compliance Method:

The emissions limitations were established based upon the following emissions calculations:

$$\text{NO}_x(\text{lbs/hr}) = (\text{NO}_x \text{ Loading mg/m}^3) * (\text{Flow Rate m}^3/\text{hr}) * (1\text{g}/1,000\text{mg}) * (1\text{lb} / 454\text{g})$$

$$\text{NO}_x(\text{tons/yr}) = (\text{NO}_x\text{lb/hr} * 8,760 \text{ hr/yr}) / (2,000 \text{ lbs/ton})$$

Where:

NO_x Loading (based calculations provided by SSOE):

$$\text{Nitration air stream} = 599.45 \text{ mg/m}^3$$

NO_x Flow Rate (based on mass balance provided by SSOE):

$$\text{Nitration air stream} = 400 \text{ m}^3/\text{hr}$$

Therefore:

$$(599.45 \text{ mg/m}^3) * (400 \text{ m}^3/\text{hr}) * (1\text{g}/1,000\text{mg}) * (1\text{lb}/454\text{g}) = 0.53 \text{ lb/hr}$$

$$(0.53 \text{ lb/hr} * 8,760 \text{ hr/yr}) / (2,000 \text{ lbs/ton}) = 2.3 \text{ tons/yr}$$

b. Emissions Limitations:

PE shall not exceed 0.03 lb/hr and 0.13 ton per year.

Applicable Compliance Method:

The emissions limitations were established based upon the following emissions calculations:

$$\text{PE}(\text{lbs/hr}) = (\text{PE Loading mg/m}^3) * (\text{Flow Rate m}^3/\text{hr}) * (1\text{g}/1,000\text{mg}) * (1\text{lb} / 454\text{g})$$

$$\text{PE}(\text{tons/yr}) = (\text{PElb/hr} * 8,760 \text{ hr/yr}) / (2,000 \text{ lbs/ton})$$

Where:

PE Loading (based calculations provided by SSOE):

$$\text{Waste air from PE transfer stream} = 54.73 \text{ mg/m}^3$$

PE Flow Rate (based on mass balance provided by SSOE):



Waste air from PE transfer stream = 250 m³/hr

Therefore:

$$(54.73 \text{ mg/m}^3) * (250 \text{ m}^3/\text{hr}) * (1\text{g}/1,000\text{mg}) * (1\text{lb}/454\text{g}) = 0.03 \text{ lb/hr}$$

$$(0.03 \text{ lb/hr} * 8760 \text{ hr/yr}) / (2,000 \text{ lbs/ton}) = 0.13 \text{ ton/yr}$$

c. Emissions Limitation:

Visible PE from this emissions unit shall not exceed 10% opacity, as a 6-minute average.

Applicable Compliance Method:

If required, visible particulate emissions shall be determined according to USEPA Method 9.

g) Miscellaneous Requirements

(1) None.