



John R. Kasich, Governor  
 Mary Taylor, Lt. Governor  
 Craig W. Butler, Director

4/19/2016

Certified Mail

Mr. Steve Dopuch  
 Pallas Nitrogen LLC  
 6080 Center Street  
 Mentor, OH 44060

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL

Facility ID: 0215132002  
 Permit Number: P0118959  
 Permit Type: Initial Installation  
 County: Columbiana

Yes	TOXIC REVIEW
Yes	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
Yes	CEMS
Yes	MACT/GACT
Yes	NSPS
Yes	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
Yes	MODELING SUBMITTED
Yes	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Morning Journal. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall  
 Permit Review/Development Section  
 Ohio EPA, DAPC  
 50 West Town Street, Suite 700  
 P.O. Box 1049  
 Columbus, Ohio 43216-1049

and Ohio EPA DAPC, Northeast District Office  
 2110 East Aurora Road  
 Twinsburg, OH 44087

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Northeast District Office at (330)963-1200.

Sincerely,

Michael E. Hopkins, P.E.  
 Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA Region 5 -Via E-Mail Notification  
 Ohio EPA-NEDO; Pennsylvania; West Virginia  
 Clyde Thompson



## PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at: <http://epa.ohio.gov/actions.aspx> or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email: [HClerk@epa.ohio.gov](mailto:HClerk@epa.ohio.gov)

Draft Air Pollution Permit-to-Install Initial Installation  
Pallas Nitrogen LLC  
Sixteen School Rd., Wellsville, OH 43958  
ID#:P0118959  
Date of Action: 4/19/2016

Permit Desc: Pallas Nitrogen, LLC (Pallas) proposes to construct a new natural gas-based facility for the manufacture of nitrogenous products. The facility will consume an estimated 58 million standard cubic feet per day of natural gas (nominal 23 billion scf per year) and will produce ammonia, nitric acid, ammonium nitrate solution, granulated urea, urea ammonium nitrate, diesel exhaust fluid, and urea liquor (not for sale). This draft permit proposes to allow the installation of production processes described above. This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations. The proposed allowable emission rates of PSD pollutants from the facility in tons per year are: Carbon Monoxide 154.3; Volatile Organic Compounds 150.4; Nitrogen Oxides 130.3; Particulate Matter (PM) less than or equal to 10 microns 64.9; PM less than or equal to 2.5 microns 60.9; Sulfur Dioxide 3.3; Lead 0.003; Greenhouse Gas/Carbon Dioxide equivalent 1,494,182. The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the ID # or: Corey Kurjian, Ohio EPA NEDO - DAPC, 2110 E Aurora Rd, Twinsburg, OH 44087. Ph: (330)963-1200





**DRAFT**

**Division of Air Pollution Control  
Permit-to-Install  
for  
Pallas Nitrogen LLC**

Facility ID:	0215132002
Permit Number:	P0118959
Permit Type:	Initial Installation
Issued:	4/19/2016
Effective:	To be entered upon final issuance





**Division of Air Pollution Control**  
**Permit-to-Install**  
for  
Pallas Nitrogen LLC

**Table of Contents**

Authorization .....	1
A. Standard Terms and Conditions .....	6
1. Federally Enforceable Standard Terms and Conditions .....	7
2. Severability Clause .....	7
3. General Requirements .....	7
4. Monitoring and Related Record Keeping and Reporting Requirements.....	8
5. Scheduled Maintenance/Malfunction Reporting .....	9
6. Compliance Requirements .....	9
7. Best Available Technology .....	10
8. Air Pollution Nuisance .....	11
9. Reporting Requirements .....	11
10. Applicability .....	11
11. Construction of New Sources(s) and Authorization to Install .....	11
12. Permit-To-Operate Application .....	12
13. Construction Compliance Certification .....	13
14. Public Disclosure .....	13
15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations .....	13
16. Fees.....	13
17. Permit Transfers .....	13
18. Risk Management Plans .....	13
19. Title IV Provisions .....	13
B. Facility-Wide Terms and Conditions.....	14
C. Emissions Unit Terms and Conditions .....	19
1. B001, Startup Heater .....	20
2. B002, Primary Reformer Heater .....	28
3. Emissions Unit Group – B003 and B004 .....	41
4. F001, Paved Roadways .....	51
5. P001, Amine Regenerator (MDEA Stripper).....	55
6. P002, Ammonium Nitrate Plant Process .....	62
7. P003, Back-End Process with flare .....	70



8. P004, Ammonia Synthesis Process with flare .....	79
9. P005, Nitric Acid Process.....	90
10. P006, Urea Granulation Process.....	101
11. P007, Urea Synthesis (Melt) .....	113
12. P008, Emergency Fire Pump Diesel Engine .....	119
13. P009, Emergency Generator.....	129
14. Emissions Unit Group – P010 and P011 .....	139
15. P012, Wastewater Treatment Plant Cooling Water Tower.....	144
16. F004, Urea Process Equipment Leaks .....	148
17. P901, Granulated Urea Transfer Points with bin vents.....	154
18. Emissions Unit Group – T005, T006, and T007.....	160
19. Emissions Unit Group – T010 and T011.....	164
20. T018, Ammonia Day Tank.....	168



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

## Authorization

Facility ID: 0215132002  
Facility Description:  
Application Number(s): A0053063, A0053637  
Permit Number: P0118959  
Permit Description: Pallas Nitrogen, LLC (Pallas) proposes to construct a new natural gas-based facility for the manufacture of nitrogenous products. The facility will consume an estimated 58 million standard cubic feet per day (MMscfd) of natural gas (nominal 23 billion scf per year) and will produce ammonia (NH<sub>3</sub>), nitric acid (HNO<sub>3</sub>), ammonium nitrate solution (ANS), granulated urea, urea ammonium nitrate (UAN), diesel exhaust fluid (DEF), and urea liquor (not for sale).  
Permit Type: Initial Installation  
Permit Fee: \$22,425.00 *DO NOT send payment at this time, subject to change before final issuance*  
Issue Date: 4/19/2016  
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

Pallas Nitrogen LLC  
Sixteen School Rd  
Wellsville, OH 43958

of a Permit-to-Install 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, Northeast District Office  
2110 East Aurora Road  
Twinsburg, OH 44087  
(330)963-1200

The above named entity is hereby granted a Permit-to-Install for the 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 emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler  
Director



## Authorization (continued)

Permit Number: P0118959

Permit Description: Pallas Nitrogen, LLC (Pallas) proposes to construct a new natural gas-based facility for the manufacture of nitrogenous products. The facility will consume an estimated 58 million standard cubic feet per day (MMscfd) of natural gas (nominal 23 billion scf per year) and will produce ammonia (NH3), nitric acid (HNO3), ammonium nitrate solution (ANS), granulated urea, urea ammonium nitrate (UAN), diesel exhaust fluid (DEF), and urea liquor (not for sale).

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

<b>Emissions Unit ID:</b>	<b>B001</b>
Company Equipment ID:	AP01 Startup Heater
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B002</b>
Company Equipment ID:	AP02 Primary Reformer
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B003</b>
Company Equipment ID:	X01 Package Boiler 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>B004</b>
Company Equipment ID:	X02 Package Boiler 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>F001</b>
Company Equipment ID:	X10 Paved Haul Roads for Shipping Products
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>F003</b>
Company Equipment ID:	AS05 Ammonia Plant Equipment Leaks
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>F004</b>
Company Equipment ID:	UP02 Urea Plant Equipment Leaks
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>J001</b>
Company Equipment ID:	X14 Pallas Nitrogen Loading Rack
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P001</b>
Company Equipment ID:	AP03 Amine Regenerator (MDEA Stripper)
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Effective Date:** To be entered upon final issuance

<b>Emissions Unit ID:</b>	<b>P002</b>
Company Equipment ID:	AN01 Ammonium Nitrate Plant Process Vents
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P003</b>
Company Equipment ID:	AP05 Back-End Process Vents
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P004</b>
Company Equipment ID:	AS01 Ammonia Synthesis Process Vents
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P005</b>
Company Equipment ID:	NA01 Nitric Acid Process Vents
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P006</b>
Company Equipment ID:	UG01 Urea Granulation Vent
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P007</b>
Company Equipment ID:	UP01 Urea Synthesis (Melt) Vent
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P008</b>
Company Equipment ID:	X03 Firewater Pump Diesel Engine
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P009</b>
Company Equipment ID:	X04 Emergency Generator
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P010</b>
Company Equipment ID:	X06 Process Cooling Water Tower 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P011</b>
Company Equipment ID:	X07 Process Cooling Water Tower 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P012</b>
Company Equipment ID:	X13 Wastewater Treatment Plant Cooling Water Tower
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P901</b>
Company Equipment ID:	UG03-UG06 Granulated Urea Transfer Points
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Effective Date:** To be entered upon final issuance

<b>Emissions Unit ID:</b>	<b>T001</b>
Company Equipment ID:	AP04 MDEA Storage Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T002</b>
Company Equipment ID:	UG02 Formaldehyde Storage
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T003</b>
Company Equipment ID:	X08 Sodium Hypochlorite Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T004</b>
Company Equipment ID:	X09 Sulfuric Acid Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T005</b>
Company Equipment ID:	AS02-AS04 and DT04 Ammonia Tanks 1-3 and Ammonia Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T006</b>
Company Equipment ID:	AS03 Ammonia Tank 2 and Ammonia Tank Flare 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T007</b>
Company Equipment ID:	AS04 Ammonia Tank 3 and Ammonia Tank Flare 3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T008</b>
Company Equipment ID:	NA02-NA03 and DT03 - NA Tanks 1-2 and NA Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T009</b>
Company Equipment ID:	NA03 NA Tank 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T010</b>
Company Equipment ID:	AN02-AN03 Ammonium Nitrate Solution Tanks 1-2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T011</b>
Company Equipment ID:	AN03 Ammonium Nitrate Solution Tank 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T012</b>
Company Equipment ID:	UP04-UP05 Urea Liquor Tanks 1-2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Effective Date:** To be entered upon final issuance

<b>Emissions Unit ID:</b>	<b>T013</b>
Company Equipment ID:	UP05 Urea Liquor Tank 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T014</b>
Company Equipment ID:	DEF01-DEF02 and DT01 DEF Tanks 1-2 and DEF Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T015</b>
Company Equipment ID:	DEF02 DEF Tank 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T016</b>
Company Equipment ID:	UAN01-UAN02 and DT02 - UAN Tanks 1-2 and UAN Day Ta
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T017</b>
Company Equipment ID:	UAN02 UAN Tank 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T018</b>
Company Equipment ID:	DT04 Ammonia Day Tank and Ammonia Day Tank Flare
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T019</b>
Company Equipment ID:	DT03 NA Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T020</b>
Company Equipment ID:	DT01 DEF Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>T021</b>
Company Equipment ID:	DT02 UAN Day Tank
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002  
**Effective Date:** To be entered upon final issuance

## **A. Standard Terms and Conditions**

**1. Federally Enforceable Standard Terms and Conditions**

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
  - (1) Standard Term and Condition A.2.a), Severability Clause
  - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
  - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
  - (4) Standard Term and Condition A.9., Reporting Requirements
  - (5) Standard Term and Condition A.10., Applicability
  - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
  - (7) Standard Term and Condition A.14., Public Disclosure
  - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
  - (9) Standard Term and Condition A.16., Fees
  - (10) Standard Term and Condition A.17., Permit Transfers

**2. Severability Clause**

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they 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 and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

**3. General Requirements**

- a) 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 re-issuance, or modification.

- 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, revoked, or revoked and reissued, for cause. 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 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.

#### **4. Monitoring and Related Record Keeping and Reporting Requirements**

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - (1) The date, place (as defined in the permit), and time of sampling or measurements.
  - (2) The date(s) analyses were performed.
  - (3) The company or entity that performed the analyses.
  - (4) The analytical techniques or methods used.
  - (5) The results of such analyses.
  - (6) The operating conditions existing at the time of sampling or measurement.
- 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, 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.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Northeast District Office.

- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Northeast District Office. The written reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
  - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Ohio EPA DAPC, Northeast District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - (4) This permit is for an emissions unit located at a Title V facility. 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 are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **5. 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, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Northeast District Office in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

## **6. Compliance Requirements**

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted

local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

Any document (including reports) required to be submitted and required by a federally applicable requirement in this 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:
  - (1) 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.
  - (2) 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 ORC section 3704.08.
  - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - (4) 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 Ohio EPA DAPC, Northeast District Office 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:
  - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - (2) 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.

## **7. Best Available Technology**

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

**8. 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.

**9. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Northeast District Office.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Northeast District Office. 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, 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.)

**10. Applicability**

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s) not exempt from the requirement to obtain a Permit-to-Install.

**11. Construction of New Sources(s) and Authorization to Install**

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the

Director within a reasonable time before the termination date and the permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., 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) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., 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). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

## **12. Permit-To-Operate Application**

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

**13. Construction Compliance Certification**

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

**14. Public Disclosure**

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

**15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations**

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 by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**16. 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. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

**17. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

**18. Risk Management Plans**

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

**19. 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.



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002  
**Effective Date:** To be entered upon final issuance

## **B. Facility-Wide Terms and Conditions**

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

- a) None.

2. The following emissions units contained in this permit are subject to 40 CFR, Part 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: B003 and B004. The complete NSPS requirements, including the NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart Db. The permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 60, Subpart Db, and Subpart A.

3. The following emissions unit contained in this permit is subject to 40 CFR, Part 60, Subpart Ga, Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011: P005. The complete NSPS requirements, including the NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart Ga. The permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 60, Subpart Ga, and Subpart A.

4. The following emissions units contained in this permit are subject to 40 CFR, Part 60, Subpart VVa, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006: P006 and P902. The complete NSPS requirements, including the NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart VVa. The permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 60, Subpart VVa, and Subpart A.

5. The following emissions units contained in this permit are subject to OAC rule 3745-21-09(DD), Leaks from process units that produce organic chemicals: P006 and P902. The complete requirements, may be accessed via the internet from Ohio EPA's website <http://www.epa.state.oh.us> or by contacting the Ohio EPA, Northeast District Office.

6. The following emissions units contained in this permit are subject to 40 CFR, Part 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: P008 and P009. The complete NSPS requirements, including the NSPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.



The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart IIII. The permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 60, Subpart IIII, and Subpart A.

7. The Pallas Nitrogen facility is subject to 40 CFR 61, Subpart FF, National Emission Standard for Benzene Waste Operations. The complete Part 61, Subpart FF requirements, including the Subpart A General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 61, Subpart FF. The permittee shall also comply with all applicable requirements of 40 CFR, Part 61, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 61, Subpart FF, and Subpart A.

8. The following emissions units contained in this permit are subject to 40 CFR, Part 63, Subpart ZZZZ, National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: P008 and P009. The complete NESHAPS requirements, including the NESHAPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart ZZZZ. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subpart ZZZZ, and Subpart A.

9. The following emissions units contained in this permit are subject to 40 CFR, Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters: B001, B002, B003 and B004. The complete NESHAPS requirements, including the NESHAPS General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart DDDDD. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subpart DDDDD, and Subpart A.

10. The Pallas Nitrogen facility is subject to 40 CFR 68, Chemical Accident Prevention Provisions. The complete Part 68 requirements, including the Subpart A, General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website <http://ecfr.gpoaccess.gov> or by contacting the Ohio EPA, Northeast District Office.

Anhydrous ammonia will be stored in quantities exceeding the 10,000-pound applicability threshold for this rule. As such, Pallas will be required to develop a Risk Management Plan for that material in accordance with applicable requirements.

The permittee shall comply with all applicable requirements of 40 CFR, Part 68. The permittee shall also comply with all applicable requirements of 40 CFR, Part 68, Subpart A (General Provisions).

Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR Part 68 and Subpart A.

11. The following emissions units are considered to be de minimis and/or permit exempt:

<b>Source</b>	<b>BACT</b>	<b>TPY (PTE)</b>	<b>De Minimis or Permit Exempt</b>
J001 - Loading Rack with Vapor Recovery and Capture System	Vapor recovery and capture system	0.2 (VOC)	De Minimis
F003 - Ammonia Plant Equipment Leaks	Leak detection and repair (LDAR) and comply with work practice standards in 40 CFR 60.482-1a – 60.482-11a as applicable for all equipment in VOC service.	0.1 (VOC)	De Minimis
T001 - 14,541 gallon MDEA Storage Tank	Fixed-roof design with submerged fill	0.002 (VOC)	De Minimis
T002 - 38,100 gallon Formaldehyde Storage Tank	Fixed-roof design with submerged fill	0.07 (VOC)	De Minimis
T003 - 10,000 gallon Sodium Hypochlorite Tank	Fixed-roof design	0.15 (PM <sub>10</sub> )	De Minimis
T004 - 7,500 gallon Sulfuric Acid Tank	Fixed-roof design	1.28E-08 (PM <sub>10</sub> )	De Minimis
T008 - 941,204 gallon Nitric Acid Tank 1	Fixed-roof design	0.01 (NO <sub>x</sub> )	De Minimis
T009 - 941,204 gallon Nitric Acid Tank 2	Fixed-roof design	0.01 (NO <sub>x</sub> )	De Minimis
T012 - 752,065 gallon Urea Liquor Tank 1	Fixed-roof design with submerged fill	0.0004 (VOC)	De Minimis
T013 - 752,065 gallon Urea Liquor Tank 2	Fixed-roof design with submerged fill	0.0004 (VOC)	De Minimis
T014 - 1,553,258 gallon Diesel Exhaust Fluid (DEF) Tank 1	Fixed-roof design with submerged fill	0.0001 (VOC)	De Minimis
T015 - 1,553,258 gallon Diesel Exhaust Fluid (DEF) Tank 2	Fixed-roof design with submerged fill	0.0001 (VOC)	De Minimis
T016 - 1,398,891 gallon Urea Ammonium Nitrate (UAN) Tank 1	Fixed-roof design with submerged fill	0.0003 (VOC)	De Minimis



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

T017 - 1,398,891 gallon Urea Ammonium Nitrate (UAN) Tank 2	Fixed-roof design with submerged fill	0.0003 (VOC)	De Minimis
T019 - 34,226 gallon Nitric Acid Day Tank	Fixed-roof design	0.01 (NO <sub>x</sub> )	De Minimis
T020 - 113,644 gallon DEF Day Tank	Fixed-roof design with submerged fill	6.0E-05 (VOC)	De Minimis
T021 - 113,644 gallon Urea Ammonium Nitrate Day Tank	Fixed-roof design with submerged fill	1.1E-04	De Minimis



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002  
**Effective Date:** To be entered upon final issuance

## **C. Emissions Unit Terms and Conditions**

**1. B001, Startup Heater**

**Operations, Property and/or Equipment Description:**

100 mmBtu/hr Startup Heater

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.	OAC rule 3745-31-05(A)(3) June 30, 2008	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 5.88E-04 pound per million Btu (lb/mmBtu) of heat input.  See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , PM <sub>10</sub> , NO <sub>x</sub> , CO, SO <sub>2</sub> , or VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.0824 pound per million Btu (lb/mmBtu) of heat input, 8.24 pounds per hour (lbs/hr), and 1.98 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.1 lb/mmBtu of heat input, 10 lbs/hr, and 2.4 tons per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>0.00745 lb/mmBtu of heat input, 0.75 lb/hr, and 0.18 ton per rolling, 12-month period.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.00539 lb/mmBtu of heat input, 0.54 lb/hr and 0.13 ton per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 2,840 tons per rolling, 12-month period.</p> <p>Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a 6-minute average.</p> <p>See b)(2)d. through b)(2)f.</p>
d.	OAC rule 3745-31-05(D)	<p>SO<sub>2</sub> emissions shall not exceed 0.014 ton per rolling, 12-month period.</p> <p>See c)(2)</p>
e.	OAC rule 3745-17-07(A)	See b)(2)g.
f.	OAC rule 3745-17-10(B)(1)	See b)(2)g.
g.	OAC rule 3745-18-06(E)	See b)(2)h.
h.	OAC rule 3745-110-03(J)(16)	Exemption - see b)(2)i.
i.	<p>40 CFR, Part 63, Subpart DDDDD (40 CFR 63.7480-7575)</p> <p>[In accordance with 63.7575, this emissions unit is a gaseous fuel 1 subcategory new process heater located at a major source of HAP emissions and subject to the applicable requirements specified in this section.]</p>	<p>See b)(2)j. and c)(3).</p> <p>63.7500(a) Table 3 requirements</p>

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
  - d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
  - e. The mass emission rate limitations in b)(1)a. and b)(1)c. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design.
  - f. The lb/mmBtu emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for CO, NO<sub>x</sub>, and VOC emissions for this emissions unit was determined to be the following:
    - i. good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and good air/fuel mixing).
  - g. The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
  - h. This emissions unit is exempt from the requirements of OAC rule 3745-18-06(E) in accordance with OAC rule 3745-18-06(C).
  - i. The permittee is exempt from the requirements of OAC rule 3745-110-03(A) through (F), since this permit restricts NO<sub>x</sub> emissions from this emissions unit to less than 25 tons per year.
  - j. This emissions unit is subject to the initial notification requirements of 40 CFR, Part 63, Subpart DDDDD (Boiler MACT) as outlined in 63.9(b) (i.e., it is not subject to the emission limits, performance testing, monitoring, or site-specific monitoring plan requirements of Subpart DDDDD or any other requirements in 40 CFR, Part 63, Subpart A).
- c) Operational Restrictions
- (1) The permittee shall burn only natural gas in this emissions unit.
  - (2) The maximum annual operating hours for this emissions unit shall not exceed 480 hours, based upon a rolling, 12-month summation of the operating hours.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the operating hours levels specified in the following table:

Month(s)	Cumulative Operating Hours
1	100
1-2	200
1-3	300
1-4	320
1-5	340
1-6	360
1-7	380
1-8	400
1-9	420
1-10	440
1-11	460
1-12	480

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

- (3) Pursuant to 40 CFR 63.7540(a)(12), because this emissions unit is a process heater or boiler in the Gas 1 subcategory with a continuous oxygen trim system that maintains an optimum air to fuel ratio, the permittee shall conduct a tune-up of the boiler or process heater every 5 years as specified in 40 CFR 63.7540(a)(10)(i) through 63.7540(a)(10)(vi). The permittee may delay the burner inspection specified in paragraph 63.7540(a)(10)(i) until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. Pursuant to 40 CFR 63.7540(a)(13), if the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

d) **Monitoring and/or Recordkeeping 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 monthly records of the following information:
  - a. the operating hours for each month; and

- b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the permittee shall record the cumulative operating hours for each calendar month.

e) 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 quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation;

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

CO emissions shall not exceed 0.0824 lb/mmBtu of heat input, 8.24 lbs/hr, and 1.98 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (100 mmBtu/hr) by the CO emission factor per the BACT analysis (0.0824 lb/mmBtu) to determine the hourly emissions.

The annual emission limitation was developed by multiplying the hourly emission limitation (8.24 lbs/hr) by the maximum annual operating hours (480 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 0.1 lb/mmBtu of heat input, 10.0 lbs/hr, and 2.4 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (100 mmBtu/hr) by the NO<sub>x</sub> emission factor per the BACT analysis (0.1 lb/mmBtu) to determine the hourly emissions.

The annual emission limitation was developed by multiplying the hourly emission limitation (10.0 lbs/hr) by the maximum annual operating hours (480 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

c. Emission Limitation:

PM<sub>10</sub> and PM<sub>2.5</sub> shall not exceed 0.007 lb/mmBtu of heat input, 0.75 lb/hr, and 0.18 ton per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor. The hourly emission limitation was developed by multiplying the maximum heat input (100 mmBtu/hr) by the PM<sub>10</sub>/PM<sub>2.5</sub> emission factor per AP-42 (7.45E-03 lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 201 or 201A and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.75 lb/hr) by the maximum annual operating hours (480 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

d. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 5.88E-04 lb/mmBtu of heat input and 0.014 ton per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor(5.88E-04).

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 1 thru 4 and 6C of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation ( $5.88E-04$  lb/mmBtu) by the maximum heat input (100 mmBtu/hr), multiplied by the maximum annual operating hours (480 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

e. Emission Limitation:

VOC emissions shall not exceed 0.005 lb/mmBtu of heat input, 0.54 lb/hr, and 0.18 ton per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (100 mmBtu/hr) by the VOC emission factor per the BACT analysis ( $5.39E-03$ ) lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.54 lb/hr) by the maximum annual operating hours (480 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

f. Emission Limitation:

Carbon dioxide equivalent ( $CO_2e$ ) emissions shall not exceed 2,840 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the product of the maximum natural gas firing rate (100 mmBtu/hr) multiplied by the AP-42 emission factors for  $CO_2$ ,  $N_2O$ , and  $CH_4$  from Table 1.4-2 dated 7/98 (120,000 lb/mmscf, 0.64 lb/mmscf, and 2.3 lb/mmscf, respectively), multiplied by the global warming potentials for  $CO_2$ ,  $N_2O$ ,

and CH<sub>4</sub> (1, 298, and 25, respectively from Table A-1 to Subpart A of 40 CFR Part 98). Divide by the average heating value used for AP-42 emission factors in Table 1.-42 dated 7/98 (1,020 Btu/scf), multiply by the maximum annual hours of operation (480 hrs/yr) and divide by 2,000 pounds per ton.

$$\begin{aligned} & \left(100 \frac{\text{mmBtu}}{\text{hr}}\right) \times \left[ \left(120,000 \frac{\text{lb}}{\text{mmscf}} \times (1)\right) + \left(0.64 \frac{\text{lb}}{\text{mmscf}} (298)\right) \right. \\ & \quad \left. + \left(2.3 \frac{\text{lb}}{\text{mmscf}}\right) (25) \right] \times \left(\frac{\text{mmscf}}{1020 \text{mmBtu}}\right) \left(480 \frac{\text{hrs}}{\text{yr}}\right) \times \left(\frac{\text{ton}}{2,000 \text{lb}}\right) \\ & = 2,840 \frac{\text{tons}}{\text{yr}} \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/scf CO<sub>2</sub> emission rate does not exceed 120,000 lb/mmscf.

If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/scf CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation:

Visible emissions shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) None.

**2. B002, Primary Reformer Heater**

**Operations, Property and/or Equipment Description:**

740 mmBtu/hr Primary Reformer Heater with selective catalytic reduction (SCR)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(4) through d)(7).

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) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 5.88E-04 pound per million Btu (lb/mmBtu) of heat input.  See b)(2)a. and b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the SO <sub>2</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
d.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.0194 pound per million Btu (lb/mmBtu) of heat input, 14.4 pounds per hour (lbs/hr), and 62.9 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.0125 lb/mmBtu of heat input, 9.3 lbs/hr, and 40.5 tons per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>diameter (PM<sub>2.5</sub>) shall not exceed 0.0075 lb/mmBtu of heat input, 5.6 lbs/hr, and 24.2 tons per rolling, 12-month period.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.0054 lb/mmBtu of heat input, 4.0 lbs/hr and 17.5 tons per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 383,584 tons per rolling, 12-month period.</p> <p>Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a 6-minute average.</p> <p>See b)(2)d., b)(2)e. through b)(2)g.</p>
e.	OAC rule 3745-17-07(A)	See b)(2)h.
f.	OAC rule 3745-17-10(B)(1)	See b)(2)h.
g.	OAC rule 3745-110-03	Exemption - see b)(2)h.
h.	ORC 3704.03(F) and OAC rule 3745-114	See d)(2) through d)(4).
i.	<p>40 CFR, Part 63, Subpart DDDDD (40 CFR 63.7480-7575)</p> <p>[In accordance with 63.7575, this emissions unit is a gaseous fuel 1 subcategory new process heater located at a major source of HAP emissions and subject to the applicable requirements specified in this section.]</p>	<p>See b)(2)i. and c)(2).</p> <p>63.7500(a) Table 3 requirements</p>

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
  - d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
  - e. The mass emission rate limitations in b)(1)b. and b)(1)d. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design with the exception of NO<sub>x</sub> emissions.
  - f. This emissions unit shall employ low NO<sub>x</sub> burners and the emissions from this emissions unit shall be vented to the SCR at all times during which the emissions unit is in operation.
  - g. The lb/mmBtu emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
    - i. for PE, CO, and VOC emissions, good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and good air/fuel mixing);
    - ii. for NO<sub>x</sub> emissions, the use of an SCR and low NO<sub>x</sub> burners; and
    - iii. for GHG emissions, good operational practices and energy efficient operation.
  - h. The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
  - i. This emissions unit is subject to the initial notification requirements of 40 CFR, Part 63, Subpart DDDDD (Boiler MACT) as outlined in 63.9(b) (i.e., it is not subject to the emission limits, performance testing, monitoring, or site-specific monitoring plan requirements of Subpart DDDDD or any other requirements in 40 CFR, Part 63, Subpart A).
- c) Operational Restrictions
- (1) The permittee shall burn only natural gas in this emissions unit.
  - (2) Pursuant to 40 CFR 63.7540(a)(12), because this emissions unit is a process heater or boiler in the Gas 1 subcategory with a continuous oxygen trim system that maintains an optimum air to fuel ratio, the permittee shall conduct a tune-up of the boiler or process heater every 5 years as specified in 40 CFR 63.7540(a)(10)(i) through 63.7540(a)(10)(vi). The permittee may delay the burner inspection specified in paragraph 63.7540(a)(10)(i) until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. Pursuant to 40

CFR 63.7540(a)(13), if the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.

- (3) The permittee shall have a one-time energy assessment performed by a qualified energy assessor, pursuant to work practice standards 4.a through 4.h in Table 3 of 40 CFR, Part 63, Subpart DDDDD. The subsequent report associated with this assessment shall be submitted no later than January 31, 2016.
- d) Monitoring and/or Recordkeeping 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) In order to maintain compliance with the applicable NO<sub>x</sub> emission limitation(s) contained in this permit, the acceptable ammonia solution injection rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
  - (3) The permittee shall properly install, operate, and maintain equipment to continuously monitor the ammonia solution injection rate (in gallons per minute), including periods of startup and shutdown. The permittee shall record the ammonia solution injection rate on a continuous basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable ammonia solution injection rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the 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 ammonia solution injection rate 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.

These range(s) and/or limit(s) for the ammonia solution injection rate are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted range or limit for ammonia solution injection rate based upon information obtained during future performance tests that demonstrate compliance with the allowable NO<sub>x</sub> emission rate for this emissions unit. In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (4) The permit-to-install (PTI) application for this emissions unit, B002, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., "8" hours per day and "5" 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: ammonia (NH<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 25.0

Maximum Hourly Emission Rate (lbs/hr): 2.89

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 5.11

MAGLC (ug/m<sup>3</sup>): 414.6

The permittee, has demonstrated that emissions of NH<sub>3</sub>, from emissions unit(s) B002, 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).

- (5) 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 PTI 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.

- (6) 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.

- (7) 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 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 quarterly deviation (excursion) reports that identify the following:
  - a. each period of time (start time and date, and end time and date) when the ammonia solution injection rate was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range for each parameter following any required compliance demonstration;
  - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not controlled by low NO<sub>x</sub> burners and the SCR;
  - 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, that would bring the ammonia solution injection rate into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

CO emissions shall not exceed 0.0194 lb/mmBtu of heat input, 14.4 lbs/hr, and 62.9 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (740 mmBtu/hr) by the CO emission factor per the BACT analysis (0.0194 lb/mmBtu) to determine the hourly emissions.

The annual emission limitation was developed by multiplying the hourly emission limitation (14.4 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation is shown.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 0.0125 lb/mmBtu of heat input, 9.3 lbs/hr, and 40.5 tons per rolling, 12-month period.

Applicable Compliance Method:

The permittee shall demonstrate compliance using Methods 1 thru 4 and 7E of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR 60.4400. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA. See f)(2).

c. Emission Limitation:

PM<sub>10</sub> and PM<sub>2.5</sub> shall not exceed 0.0075 lb/mmBtu of heat input, 5.6 lbs/hr, and 24.2 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor. The hourly emission limitation was developed by multiplying the maximum heat input (740 mmBtu/hr) by the PM<sub>10</sub>/PM<sub>2.5</sub> emission factor per AP-42 (0.0075 lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 201 or 201A and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (5.6 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual

limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

d. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 5.88E-04 lb/mmBtu of heat input.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor (5.88E-04).

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 1 thru 4 and 6C of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation (5.88E-04 lb/mmBtu) by the maximum heat input (740 mmBtu/hr), multiplied by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

e. Emission Limitation:

VOC emissions shall not exceed 0.0054 lb/mmBtu of heat input, 4.0 lbs/hr, and 17.5 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (740 mmBtu/hr) by the VOC emission factor per the BACT analysis (0.0054 lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (4.0 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

f. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 381,318 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the product of the maximum natural gas firing rate (740 mmBtu/hr) multiplied by the AP-42 emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> from Table 1.4-2 dated 7/98 (120,000 lb/mmscf, 0.64 lb/mmscf, and 2.3 lb/mmscf, respectively), multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 298, and 25, respectively from Table A-1 to Subpart A of 40 CFR Part 98). Divide by the average heating value used for AP-42 emission factors in Table 1.-42 dated 7/98 (1,020 Btu/scf), multiply by the maximum annual hours of operation (8,760 hrs/yr) and divide by 2,000 pounds per ton.

$$\begin{aligned} & \left(740 \frac{mmBtu}{hr}\right) \times \left[ \left(120,000 \frac{lb}{mmscf} \times (1)\right) + \left(0.64 \frac{lb}{mmscf} (298)\right) \right. \\ & \quad \left. + \left(2.3 \frac{lb}{mmscf} (25)\right) \right] \times \left(\frac{mmscf}{1020mmBtu}\right) \left(8,760 \frac{hrs}{yr}\right) \times \left(\frac{ton}{2,000lb}\right) \\ & = 381,584 \frac{tons}{yr} \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/scf CO<sub>2</sub> emission rate does not exceed 120,000 lb/mmscf.

If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/scf CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation:

Visible emissions shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

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

- a. The emission testing shall be conducted within 3 months after start-up.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate for NO<sub>x</sub>.
- c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

NO<sub>x</sub>, Methods 1 thru 4 and 7E of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR 60.4400.

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

- d. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by the Ohio EPA Northeast District Office. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.
- 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 Office's refusal to accept the results of the emission test(s).
- f. 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.
- g. 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.



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

g) Miscellaneous Requirements

- (1) None.

**3. Emissions Unit Group – B003 and B004**

**Operations, Property and/or Equipment Description:**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
B003	265 mmBtu/hr Package Boiler #1
B004	265 mmBtu/hr Package Boiler #2

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 5.88E-04 pound per million Btu (lb/mmBtu) of heat input.  See b)(2)a. and b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> , or VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
d.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.015 pound per million Btu (lb/mmBtu) of heat input, 4.0 pounds per hour (lbs/hr), and 17.4 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.0125 lb/mmBtu of heat input, 3.3 lbs/hr, and 14.5 tons per rolling, 12-month period.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Particulate matter emissions less than 10 microns in diameter (PM<sub>10</sub>) and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) shall not exceed 0.0075 lb/mmBtu of heat input, 2.0 lbs/hr, and 8.6 tons per rolling, 12-month period.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.0054 lb/mmBtu of heat input, 1.43 lbs/hr and 6.3 tons per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 137,364 tons per rolling, 12-month period.</p> <p>Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a 6-minute average.</p> <p>See b)(2)d. through b)(2)f.</p>
e.	OAC rule 3745-17-07(A)	See b)(2)g.
f.	OAC rule 3745-17-10(B)	See b)(2)g.
g.	40 CFR Part 60, Subpart Db, Section 60.44b	See b)(2)g., b)(2)h., and b)(2)i.
h.	<p>40 CFR, Part 63, Subpart DDDDD (40 CFR 63.7480-7575 and 63.9)</p> <p>[In accordance with 63.7575, this emissions unit is a gaseous fuel 1 subcategory new process heater located at a major source of HAP emissions and subject to the applicable requirements specified in this section.]</p>	<p>See b)(2)j., c)(2) and c)(3)</p> <p>63.7500(a) Table 3 requirements</p> <p>63.9(b) Initial notification requirements</p>

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- e. The mass emission rate limitations in b)(1)b. and b)(1)d. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design.
- f. The lb/mmBtu emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for PE, CO, and VOC emissions, good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and good air/fuel mixing);
  - ii. for NO<sub>x</sub> emissions, the use of low NO<sub>x</sub> burners; and
  - iii. for GHG emissions, athermal efficiency of 80%, based on HHV in addition to good design, good combustion practices, and energy efficient operation.
- g. The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
- h. The permittee shall maintain a written quality assurance/quality control plan for the continuous NO<sub>x</sub> monitoring system, designed to ensure continuous valid and representative readings of NO<sub>x</sub> emissions in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous NO<sub>x</sub> monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.
- i. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

- j. This emissions unit is subject to the initial notification requirements of 40 CFR, Part 63, Subpart DDDDD (Boiler MACT) as outlined in 63.9(b) (i.e., it is not subject to the emission limits, performance testing, monitoring, or site-specific monitoring plan requirements of Subpart DDDDD or any other requirements in 40 CFR, Part 63, Subpart A).

c) Operational Restrictions

- (1) The permittee shall burn only natural gas in this emissions unit.
- (2) Pursuant to 40 CFR 63.7540(a)(12), because this emissions unit is a process heater or boiler in the Gas 1 subcategory with a continuous oxygen trim system that maintains an optimum air to fuel ratio, the permittee shall conduct a tune-up of the boiler or process heater every 5 years as specified in 40 CFR 63.7540(a)(10)(i) through 63.7540(a)(10)(vi). The permittee may delay the burner inspection specified in paragraph 63.7540(a)(10)(i) until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. Pursuant to 40 CFR 63.7540(a)(13), if the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.
- (3) The permittee shall have a one-time energy assessment performed by a qualified energy assessor, pursuant to work practice standards 4.a through 4.h in Table 3 of 40 CFR, Part 63, Subpart DDDDD. The subsequent report associated with this assessment shall be submitted no later than January 31, 2016.

d) Monitoring and/or Recordkeeping 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 on-site, the document(s) of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous NOx monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. The letter(s)/document(s) of certification shall be made available to the Director (the appropriate Ohio EPA District Office or local air agency) upon request.

[40 CFR 60.13] and [40 CFR Part 60, Appendix B]

- (3) The permittee shall operate and maintain equipment to continuously monitor and record NOx emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous NOx monitoring system including, but not limited to:

- a. emissions of NOx in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

- b. emissions of NO<sub>x</sub> in pounds per hour and in units of the applicable standard(s) in the appropriate averaging period;
- c. results of quarterly cylinder gas audits;
- d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;
- e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);
- f. hours of operation of the emissions unit, continuous NO<sub>x</sub> monitoring system, and control equipment;
- g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO<sub>x</sub> monitoring system;
- h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO<sub>x</sub> monitoring system; as well as,
- i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

[40 CFR 60.13] and [40 CFR Part 60, Appendices B & F]

- (4) The permittee shall maintain daily records of the amount of natural gas fired in this emissions unit.
- e) 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) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
  - (3) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous NO<sub>x</sub> monitoring system:
    - a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the appropriate Ohio EPA District Office or local air agency, documenting all instances of NO<sub>x</sub> emissions in

excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapters 3745-14 and 3745-23, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

- b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:
- i. the facility name and address;
  - ii. the manufacturer and model number of the continuous NO<sub>x</sub> and other associated monitors;
  - iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;
  - iv. the excess emissions report (EER)\*, i.e., a summary of any exceedances during the calendar quarter, as specified above;
  - v. the total NO<sub>x</sub> emissions for the calendar quarter (tons);
  - vi. the total operating time (hours) of the emissions unit;
  - vii. the total operating time of the continuous NO<sub>x</sub> monitoring system while the emissions unit was in operation;
  - viii. results and dates of quarterly cylinder gas audits;
  - ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));
  - x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO<sub>x</sub> monitor out-of-control and the compliant results following any corrective actions;
  - xi. the date, time, and duration of any/each malfunction\*\* of the continuous NO<sub>x</sub> monitoring system, emissions unit, and/or control equipment;
  - xii. the date, time, and duration of any downtime\*\* of the continuous NO<sub>x</sub> monitoring system and/or control equipment while the emissions unit was in operation; and
  - xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

\* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

\*\* each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

- (4) The permittee shall submit annual reports that specify the total PE, carbon monoxide, nitrogen oxides, VOC, and sulfur dioxide emissions from this emissions unit for the previous calendar year. These reports shall be submitted to Ohio EPA by January 31<sup>st</sup> of each year.

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. Emission Limitation:

CO emissions shall not exceed 0.015 lb/mmBtu of heat input, 4.0 lbs/hr, and 17.4 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (265 mmBtu/hr) by the CO emission factor per the BACT analysis (0.015 lb/mmBtu) to determine the hourly emissions.

The annual emission limitation was developed by multiplying the hourly emission limitation (4.0 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation is shown.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 0.0125 lb/mmBtu of heat input, 3.3 lbs/hr, and 14.5 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (265 mmBtu/hr) by the NO<sub>x</sub> emission factor per the BACT analysis (0.0125 lb/mmBtu) to determine the hourly emissions.

The annual emission limitation was developed by multiplying the hourly emission limitation (3.3 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

Ongoing compliance with the NO<sub>x</sub> emissions limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

c. Emission Limitation:

PM<sub>10</sub> and PM<sub>2.5</sub> shall not exceed 0.0075 lb/mmBtu of heat input, 2.0 lbs/hr, and 8.6 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor. The hourly emission limitation was developed by multiplying the maximum heat input (265 mmBtu/hr) by the PM<sub>10</sub>/PM<sub>2.5</sub> emission factor per AP-42 (0.0075 lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 201 or 201A and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (2.0 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

d. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 5.88E-04 lb/mmBtu of heat input.

Applicable Compliance Method:

The lb/mmBtu limitation is based on AP-42, Table 1.4-2 [7/98] emission factor.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation using Methods 1 thru 4 and 6C of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the lb/mmBtu emission limitation (5.88E-04 lb/mmBtu) by the maximum heat input (265

mmBtu/hr), multiplied by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

e. Emission Limitation:

VOC emissions shall not exceed 0.0054 lb/mmBtu of heat input, 1.43 lbs/hr, and 6.3 tons per rolling, 12-month period.

Applicable Compliance Method:

The lb/mmBtu emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. The hourly emission limitation was developed by multiplying the maximum heat input (265 mmBtu/hr) by the VOC emission factor per the BACT analysis (0.0054 lb/mmBtu) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (1.43 lbs/hr) by the maximum annual operating hours (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

f. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 137,364 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the product of the maximum natural gas firing rate (265 mmBtu/hr) multiplied by the AP-42 emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> from Table 1.4-2 dated 7/98 (120,000 lb/mmscf, 0.64 lb/mmscf, and 2.3 lb/mmscf, respectively), multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 298, and 25, respectively from Table A-1 to Subpart A of 40 CFR Part 98). Divide by the average heating value used for AP-42 emission factors in Table 1.-42 dated 7/98 (1,020 Btu/scf), multiply by the maximum annual hours of operation (8,760 hrs/yr) and divide by 2,000 pounds per ton.

$$\begin{aligned} & \left(265 \frac{mmBtu}{hr}\right) \times \left[ \left(120,000 \frac{lb}{mmscf} \times (1)\right) + \left(0.64 \frac{lb}{mmscf} (298)\right) \right. \\ & \quad \left. + \left(2.3 \frac{lb}{mmscf} (25)\right) \right] \times \left(\frac{mmscf}{1020mmBtu}\right) \left(8,760 \frac{hrs}{yr}\right) \times \left(\frac{ton}{2,000lb}\right) \\ & = 137,364 \frac{tons}{yr} \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/scf CO<sub>2</sub> emission rate does not exceed 120,000 lb/mmscf.

If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/scf CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation:

Visible emissions shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) None.

**4. F001, Paved Roadways**

**Operations, Property and/or Equipment Description:**

Paved Roadways

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) 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.	OAC rule 3745-31-05(A)(3)	Compliance with the requirements of this rule includes compliance with the requirements of OAC rule 3745-31-10 through 20.
b.	OAC rule 3745-17-07(B)(4) (applicable only if this emissions unit is located in an area identified in Appendix A of OAC rule 3745-17-08)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-08(B) (applicable only if this emissions unit is located in an area identified in Appendix A of OAC rule 3745-17-08)	See b)(2)a. through b)(2)e.
d.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Fugitive PM10 emissions shall not exceed 2.6 tons per year. Fugitive PE emissions shall not exceed 13.2 tons/year. No visible PE except for one minute during any 60-minute period Best available control measures that are sufficient to minimize or eliminate visible PE of fugitive dust (See b)(2)a. through



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		b)(2)e.) See b)(2)f.

(2) Additional Terms and Conditions

- a. The permittee shall employ best 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 application, the permittee has committed to treat the paved roadways and parking areas by application of chemical stabilization/dust suppressants and/or watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- b. 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 paved roadways and parking areas that are 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.
- c. 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.
- d. 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.
- e. Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.
- f. Per the PTI application, BACT for fugitive PE for this emissions unit was determined to be the following:
  - i. good combustion control Paving of all plant roads that will be used for raw material and product transport;
  - ii. Covering, at all times, of open-bodied vehicles when transporting materials likely to become airborne; and

- iii. Compliance with the opacity limits in OAC 3745-17-07 (B)(1). Specifically, additional mitigation measures potentially including road sweeping or wet suppression will be implemented on an as-needed basis determined through visual observation of emissions associated with truck movements on the plant site.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

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

<u>paved roadways and parking areas</u>	<u>minimum inspection frequency</u>
all roads and parking areas	daily

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

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

- a. 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;
- b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;
- c. the dates the control measures were implemented; and
- d. 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 d)(3)d. shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

e) Reporting Requirements

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

- a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and
  - b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.
- (2) The deviation reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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. Emission Limitations:  
Fugitive PM10 emissions shall not exceed 2.6 tons per year; and  
Fugitive PE emissions shall not exceed 13.2 tons/year.  
Applicable Compliance Method:  
Compliance with fugitive PE and PM10 limitations shall be determined by using the emission factor equations in Section 13.2.1, in Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1 (revised 12/03) for paved roadways. Should further updates in AP-42 occur, the most current equations for paved roads shall be used. These emission limits in the General Permit were based on a maximum of 70,000 vehicle miles traveled per year, and a 95% control efficiency for PE and PM10.
  - b. Emission Limitation:  
No visible PE from paved roadways and parking areas except for a period of time not to exceed one minute during any 60-minute observation period.  
Applicable Compliance Method:  
If required, compliance with the visible PE limitation listed above shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.
- g) **Miscellaneous Requirements**
- (1) None.

**5. P001, Amine Regenerator (MDEA Stripper)**

**Operations, Property and/or Equipment Description:**

Amine Regenerator (MDEA Stripper)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(2) through d)(5).

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) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the CO emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
d.	OAC rule 3745-31-05(D)	See c)(1) through c)(3).
e.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.02 pound per ton (lb/ton) of NH <sub>3</sub> produced, 1.5 pounds per hour (lbs/hr), and 6.4 tons per rolling, 12-month period.  Volatile organic compound (VOC) emissions shall not exceed 0.058 lb/ton NH <sub>3</sub> produced, 4.3 lbs/hr and 18.7 tons per rolling, 12-month period.  Carbon dioxide equivalent (CO <sub>2</sub> e) emissions shall not exceed 785,509 tons per rolling, 12-month period.  See b)(2)d. and b)(2)e.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	ORC 3704.03(F) and OAC rule 3745-114	See d)(2) through d)(4).

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The mass emission rate limitations in b)(1)b. and b)(1)d. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design (i.e., the maximum ammonia production values identified in c)(1) below).
- e. The lb/ton emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for CO and VOC emissions, proper equipment design and operation.

c) Operational Restrictions

- (1) The maximum NH<sub>3</sub> production shall not exceed the following 73.5 tons per hour.
- (2) The maximum NH<sub>3</sub> production shall not exceed the following 1,764 tons per day.
- (3) The maximum NH<sub>3</sub> production shall not exceed the following 643,860 tons per rolling, 12-month period.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the tons of NH<sub>3</sub> production levels specified in the following table:

Month(s)	Cumulative Tons
1	54,684
1-2	108,339
1-3	161,994



1-4	215,649
1-5	269,304
1-6	322,959
1-7	376,614
1-8	430,269
1-9	483,924
1-10	537,579
1-11	591,234
1-12	643,860

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

d) **Monitoring and/or Recordkeeping Requirements**

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

- a. the amount of NH<sub>3</sub> produced (tons); and
- b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the amount of NH<sub>3</sub> produced.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative amount of NH<sub>3</sub> produced for each calendar day.

(2) The permit-to-install (PTI) application for this emissions unit, P001, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., "8" hours per day and "5" 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):

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

- 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: methanol

TLV (mg/m<sup>3</sup>): 200

Maximum Hourly Emission Rate (lbs/hr): 1.6

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 25.0

MAGLC (ug/m<sup>3</sup>): 6240.1

The permittee, has demonstrated that emissions of methanol, from emissions unit(s) P001, 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 PTI 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 quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the ammonia production values identified in c)(1) through C)(3) above.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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. Emission Limitations:

Carbon monoxide (CO) emissions shall not exceed 0.02 pound per ton of NH<sub>3</sub> produced, 1.5 pounds per hour (lbs/hr), and 6.4 tons per rolling, 12-month period.

Applicable Compliance Method:

The hourly CO emission limitation above was developed by multiplying the CO emission factor (0.02 lb per ton of NH<sub>3</sub> produced) based on the BACT analysis by the maximum ammonia production rate of 73.5 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 10 of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

b. Emission Limitations:

Volatile organic compound (VOC) emissions shall not exceed 0.058 lb/ton NH<sub>3</sub> produced, 4.3 lbs/hr and 18.7 tons per rolling, 12-month period.

Applicable Compliance Method:

The hourly VOC emission limitation above was developed by multiplying the VOC emission factor (0.058 lb per ton of NH<sub>3</sub> produced) based on the BACT analysis by the maximum ammonia production rate of 73.5 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 18, 25, or 25A, as applicable, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 785,509 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by multiplying the CO<sub>2</sub> emission factor 2,440 lbs/ton NH<sub>3</sub> (AP-42, Table 8.1-1, also BACT) by the maximum ammonia production rate of 643,860 tons/yr multiplied by the global warming potential for CO<sub>2</sub>, (1), from Table A-1 to Subpart A of 40 CFR Part 98) and divide by 2,000 pounds per ton.

g) Miscellaneous Requirements

- (1) None.

**6. P002, Ammonium Nitrate Plant Process**

**Operations, Property and/or Equipment Description:**

Ammonium Nitrate Process with Wet Scrubber

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(3) through d)(6).

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) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-17-07(A)	The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
d.	OAC rule 3745-17-11(B)(1)	The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
e.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.0128 lb/ton ammonium nitrate (ANS), 0.2 lb/hr, and 0.7 ton per rolling, 12-month period.  Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule. See b)(2)d. through b)(2)f.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	ORC 3704.03(F) and OAC rule 3745-114	See d)(3) through d)(5).

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.
- e. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- f. The lb/ton emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for PE for this emissions unit was determined to be the following:
  - i. the use of a wet scrubber.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge) and the scrubber liquid flow rate (in gallons per minute) during operation of this/these emissions unit(s), including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's flow rate on daily basis.

The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the 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 pressure drop and flow rate 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.

These range(s) and/or limit(s) for the pressure drop and liquid flow rate 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 to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (3) The permit-to-install (PTI) application for this emissions unit, P002, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., "8" hours per day and "5" 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 (HNO<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 2

Maximum Hourly Emission Rate (lbs/hr): 12.0

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 84.87

MAGLC (ug/m<sup>3</sup>): 122.7

The permittee, having demonstrated that emissions of HNO<sub>3</sub>, from emissions unit(s) P002, is estimated to be equal or greater than eighty per cent, but less than 100 per cent of the maximum acceptable ground level concentration (MAGLC), shall not operate the emissions unit(s) at a rate that would exceed the daily emissions rate, process weight rate, and/or restricted hours of operations, as allowed in this permit; and 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).

- (4) 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 PTI 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.

- (5) 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.
  - (6) 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 quarterly deviation (excursion) reports that identify the following:
    - a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber and/or the liquid flow rate was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
    - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
    - 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, that would bring the pressure drop and/or liquid flow rate into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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:

Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.0128 lb/ton ammonium nitrate (ANS), 0.2 lb/hr, and 0.7 ton per rolling, 12-month period.

Applicable Compliance Method:

The hourly PM emission limitation above was developed by multiplying the PM emission factor (0.0128 lb per ton of ANS) based on engineering judgement and literature search (also takes into account a wet scrubber control efficiency of 95%) by the maximum ammonia production rate of 12.5 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 10 of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation (0.2 lb/hr) by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

- b. Emission Limitation:

Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule.



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) None.

**7. P003, Back-End Process with flare**

**Operations, Property and/or Equipment Description:**

Back-End Process Flare (emissions from non-routine releases from the amine regeneration and MDEA storage system) - the pilot flare has a maximum heat input of 0.9 mmBtu/hr (operates 8,760 hours per year) and the flare has a maximum heat input of 150 mmBtu/hr.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.	OAC rule 3745-31-05(A)(3) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO <sub>x</sub> and PM emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
d.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.31 pound per million Btu (lb/mmBtu) of heat input, 46.57 pounds per hour (lbs/hr), and 22.6 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.068 lb/mmBtu of heat input, 10.37 lbs/hr, and 5.6 tons per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed 0.027

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>lb/mmBtu of heat input, 4.06 lbs/hr, and 1.97 tons per rolling, 12-month period.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.57 lb/mmBtu of heat input, 85.5 lbs/hr and 41.1 tons per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 714 tons per rolling, 12-month period.</p> <p>See b)(2)d., b)(2)e., b)(2)e., and c)(2) through c)(7).</p>
e.	OAC rule 3745-31-05(D)	See c)(1).

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- e. The lb/mmBtu emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for PE, CO, NO<sub>x</sub> and VOC emissions, utilizing a flare with good combustion practices, natural gas to fuel pilots, and venting flare during only start-up, shutdown and malfunction events; and
  - ii. for GHG emissions, good operational practices and energy efficient operation.

c) Operational Restrictions

- (1) The maximum annual operating hours for this emissions unit shall not exceed 960 hours, based upon a rolling, 12-month summation of the operating hours.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the operating hours levels specified in the following table:

Month(s)	Cumulative Operating Hours
1	200
1-2	400
1-3	600
1-4	640
1-5	680
1-6	720
1-7	760
1-8	800
1-9	840
1-10	880
1-11	920
1-12	960

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

- (2) This emissions unit shall be equipped with a flare to control OC emissions. The flare shall be fired with natural gas and shall be operated with at least 98% control efficiency.
- (3) The flare shall be designed and operated with no visible emissions, as determined by 40 CFR §60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- (4) The flare shall be operated with flame present at all times, as determined by the methods specified in by 40 CFR §60.18(f).

- (5) The flare shall be used only when the net heating value of the gas being combusted is 200 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR §60.18(f).
  - (6) The flare shall be designed and operated with an exit velocity that satisfies the requirements of 40 CFR §60.18.
  - (7) The flare shall be operated at all times when emissions may be vented to it.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information:
    - a. the operating hours for each month; and
    - b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative operating hours for each calendar month.
  - (2) The permittee shall monitor the flare to ensure that it is operated when the emissions unit is in operation.
  - (3) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
  - (4) The permittee shall record the following information each month:
    - a. all periods during which there was no pilot flame; and
    - b. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment.
  - (5) 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 flare serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
    - a. the color of the emissions;
    - b. the total duration of any visible emission incident; and
    - c. any corrective actions taken to eliminate the visible emissions.
  - (6) For each day during which the flare burns a fuel other than natural gas, the permittee shall maintain a record of the types and quantities of fuel burned in the emissions unit.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
- a. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation;

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
- a. each day that the flare burned a fuel other than natural gas;
  - b. all periods during which there was no pilot flame;
  - c. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment;
  - d. all periods that there were emissions from this emissions unit but the flare was not in operation;
  - e. all periods that the flare operated in excess of 960 hours per rolling, 12-month period; and
  - f. all days during which any visible particulate emissions were observed from the flare serving this emissions unit and describe any corrective actions taken to eliminate the visible particulate emissions.

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. Emission Limitation:

Carbon monoxide (CO) emissions shall not exceed 0.31 lb/mmBtu of heat input, 46.57 lbs/hr, and 22.6 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.31 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the CO emission factor (0.31 mmBtu/hr) then adding the minimal CO emissions from the flare pilot emissions [0.08 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, the permittee shall demonstrate compliance with the lb/mmBtu limitation and hourly emission limitation using Methods 1 thru 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

b. Emission Limitation:

Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 0.068 lb/mmBtu of heat input, 10.37 lbs/hr, and 5.6 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.068 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the NO<sub>x</sub> emission factor (0.068 mmBtu/hr) then adding the minimal CO emissions from the flare pilot emissions [0.19 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, NO<sub>x</sub> emissions shall be demonstrated 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, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

c. Emission Limitation:

Particulate matter emissions less than 10 microns in diameter (PM<sub>10</sub>) and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) shall not exceed 0.027 lb/mmBtu of heat input, 4.06 lbs/hr, and 1.97 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.027 lb/mmBtu emission factor is based on the AP-42 Section 13.5 "Flare gases with less than 16,770 kJ/cubic meter (450 Btu/cubic feet) do not smoke."; April 2015 Emission Estimation Protocol for Petroleum Refineries, Table 6-3, Emission Factors for Soot from Flares, Lightly Smoking Flares. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the PM emission factor (0.027 mmBtu/hr) then adding the minimal PM emissions from the flare pilot emissions [0.01 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, particulate emissions shall be demonstrated according to test Methods 1 - 5, 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, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

d. Emission Limitation:

Volatile organic compound (VOC) emissions shall not exceed 0.57 lb/mmBtu of heat input, 85.5 lbs/hr and 41.1 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.57 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the VOC emission factor (0.57 mmBtu/hr) then adding the minimal VOC emissions from the flare pilot emissions [0.01 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual

limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

e. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 714 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the following from both the pilot flare and process flare: product of the maximum natural gas firing rate (0.9 and 150 mmBtu/hr) multiplied by the AP-42 emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> from Table 1.4-2 dated 7/98 (120,000 lb/mmscf, 0.64 lb/mmscf, and 2.3 lb/mmscf, respectively), multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 310, and 21, respectively from Table A-1 to Subpart A of 40 CFR Part 98). Divide by the average heating value used for AP-42 emission factors in Table 1.-42 dated 7/98 (1,020 Btu/scf), multiply by the maximum annual hours of operation (8,760 and 960 hrs/yr) and divide by 2,000 pounds per ton.

$$\begin{aligned} & \left(150 \frac{\text{mmBtu}}{\text{hr}}\right) \times \left[ \left(120,000 \frac{\text{lb}}{\text{mmscf}} \times (1)\right) + \left(0.64 \frac{\text{lb}}{\text{mmscf}} (310)\right) \right. \\ & \quad \left. + \left(2.3 \frac{\text{lb}}{\text{mmscf}} (21)\right) \right] \times \left(\frac{\text{mmscf}}{1020 \text{mmBtu}}\right) \left(960 \frac{\text{hrs}}{\text{yr}}\right) \times \left(\frac{\text{ton}}{2,000 \text{lb}}\right) \\ & = 252 \frac{\text{tons}}{\text{yr}} \end{aligned}$$

$$\begin{aligned} & \left(0.9 \frac{\text{mmBtu}}{\text{hr}}\right) \times \left[ \left(120,000 \frac{\text{lb}}{\text{mmscf}} \times (1)\right) + \left(0.64 \frac{\text{lb}}{\text{mmscf}} (310)\right) \right. \\ & \quad \left. + \left(2.3 \frac{\text{lb}}{\text{mmscf}} (21)\right) \right] \times \left(\frac{\text{mmscf}}{1020 \text{mmBtu}}\right) \left(8,760 \frac{\text{hrs}}{\text{yr}}\right) \times \left(\frac{\text{ton}}{2,000 \text{lb}}\right) \\ & = 462 \frac{\text{tons}}{\text{yr}} \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/scf CO<sub>2</sub> emission rate does not exceed 120,000 lb/mmscf.

If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/scf CO<sub>2</sub> emission rate.



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

f. Emission Limitation:

There shall be no visible emissions from the flare, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22.

g) Miscellaneous Requirements

- (1) None.

**8. P004, Ammonia Synthesis Process with flare**

**Operations, Property and/or Equipment Description:**

Ammonia Synthesis Process with flare - the pilot flare has a maximum heat input of 0.9 mmBtu/hr (operates 8,760 hours per year) and the flare has a maximum heat input of 150 mmBtu/hr.

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) d)(6) through d)(9).
- 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) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
c.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO <sub>x</sub> and PM emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
d.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.31 pound per million Btu (lb/mmBtu) of heat input, 46.57 pounds per hour (lbs/hr), and 22.6 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.068 lb/mmBtu of heat input, 12.44 lbs/hr, and 6.6 tons per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed 0.027

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>lb/mmBtu of heat input, 4.06 lbs/hr, and 1.97 tons per rolling, 12-month period.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.57 lb/mmBtu of heat input, 85.5 lbs/hr and 41.1 tons per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 714 tons per rolling, 12-month period.</p> <p>See b)(2)d. through b)(2)e. and c)(2) through c)(7).</p>
e.	OAC rule 3745-31-05(D)	See c)(1).
f.	ORC 3704.03(F) and OAC rule 3745-114	See d)(7) through d)(9).

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- e. The lb/mmBtu emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for PE, CO, NO<sub>x</sub> and VOC emissions, utilizing a flare with good combustion practices, natural gas to fuel pilots, and venting flare during only start-up, shutdown and malfunction events; and
  - ii. for GHG emissions, good operational practices and energy efficient operation.

c) Operational Restrictions

- (1) The maximum annual operating hours for this emissions unit/flare shall not exceed 960 hours, based upon a rolling, 12-month summation of the operating hours; the maximum startup flaring time shall not exceed 8 hours and the maximum shutdown flaring time shall not exceed 0.5 hours during any rolling, 24-hr period.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the operating hours levels specified in the following table:

Month(s)	Cumulative Operating Hours
1	200
1-2	400
1-3	600
1-4	640
1-5	680
1-6	720
1-7	760
1-8	800
1-9	840
1-10	880
1-11	920
1-12	960

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

- (2) This emissions unit shall be equipped with a flare to control OC emissions. The flare shall be fired with natural gas and shall be operated with at least 98% control efficiency.
- (3) The flare shall be designed and operated with no visible emissions, as determined by 40 CFR §60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- (4) The flare shall be operated with flame present at all times, as determined by the methods specified in by 40 CFR §60.18(f).

- (5) The flare shall be used only when the net heating value of the gas being combusted is 200 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR §60.18(f).
  - (6) The flare shall be designed and operated with an exit velocity that satisfies the requirements of 40 CFR §60.18.
  - (7) The flare shall be operated at all times when emissions may be vented to it.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall maintain monthly records of the following information:
    - a. the operating hours for each month; and
    - b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative operating hours for each calendar month.
  - (2) The permittee shall monitor the flare to ensure that it is operated when the emissions unit is in operation.
  - (3) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
  - (4) The permittee shall record the following information each month:
    - a. all periods during which there was no pilot flame; and
    - b. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment.
  - (5) 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 flare serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
    - a. the color of the emissions;
    - b. the total duration of any visible emission incident; and
    - c. any corrective actions taken to eliminate the visible emissions.
  - (6) For each day during which the flare burns a fuel other than natural gas, the permittee shall maintain a record of the types and quantities of fuel burned in the emissions unit.

(7) The permit-to-install (PTI) application for this emissions unit, P004, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., "8" hours per day and "5" 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: ammonia (NH<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 25.0

Maximum Hourly Emission Rate (lbs/hr): 153.5

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 43.9

MAGLC (ug/m3): 414.6

The permittee, has demonstrated that emissions of NH<sub>3</sub>, from emissions unit(s) P004, 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).

- (8) 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 PTI 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.

- (9) 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.
- (10) 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 quarterly deviation (excursion) reports that identify the following:
    - a. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation;
- The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
    - a. each day that the flare burned a fuel other than natural gas;
    - b. all periods during which there was no pilot flame;
    - c. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment;
    - d. all periods that there were emissions from this emissions unit but the flare was not in operation;

- e. all periods that the flare operated in excess of the maximum startup time of 8 hours and/or the maximum shutdown time of 0.5 hours per rolling, 24-hour period;
- f. all days during which any visible particulate emissions were observed from the flare serving this emissions unit and describe any corrective actions taken to eliminate the visible particulate emissions; and
- g. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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. Emission Limitation:

Carbon monoxide (CO) emissions shall not exceed 0.31 lb/mmBtu of heat input, 46.57 lbs/hr, and 22.6 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.31 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the CO emission factor (0.31 mmBtu/hr) then adding the minimal CO emissions from the flare pilot emissions [0.08 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, the permittee shall demonstrate compliance with the lb/mmBtu limitation and hourly emission limitation using Methods 1 thru 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

- b. Emission Limitation:

Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 0.068 lb/mmBtu of heat input, 10.37 lbs/hr, and 6.6 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.068 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the NO<sub>x</sub> emission factor (0.068 mmBtu/hr) then adding the minimal NO<sub>x</sub> emissions from the flare pilot emissions [0.19 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, NO<sub>x</sub> emissions shall be demonstrated 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, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

c. Emission Limitation:

Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.027 lb/mmBtu of heat input, 4.06 lbs/hr, and 1.97 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.027 lb/mmBtu emission factor is based on the AP-42 Section 13.5 "Flare gases with less than 16,770 kj/cubic meter (450 Btu/cubic feet) do not smoke."; April 2015 Emission Estimation Protocol for Petroleum Refineries, Table 6-3, Emission Factors for Soot from Flares, Lightly Smoking Flares. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the PM emission factor (0.027 mmBtu/hr) then adding the minimal PM emissions from the flare pilot emissions [0.01 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, particulate emissions shall be demonstrated according to test Methods 1 - 5, 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, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then

dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

d. Emission Limitation:

Volatile organic compound (VOC) emissions shall not exceed 0.57 lb/mmBtu of heat input, 85.5 lbs/hr and 41.1 tons per rolling, 12-month period.

Applicable Compliance Method:

The 0.57 lb/mmBtu emission factor is based on the AP-42 Table 13.5-1. The hourly emission limitation was developed by multiplying the maximum heat input of the flare (150 mmBtu/hr) by the VOC emission factor (0.57 mmBtu/hr) then adding the minimal VOC emissions from the flare pilot emissions [0.01 lb/mmBtu (emission factor) multiplied by 0.9 mmBtu/hr (heat input)].

If required, the permittee shall demonstrate compliance with the lb/mmBtu and hourly emission limitation Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA, Northeast District Office.

The annual emission limitation was developed by multiplying the hourly flare pilot emissions by the maximum annual operating hours (8,760 hrs/yr) and then adding these emissions to the flare emissions which is determined by multiplying the hourly emissions by the maximum annual operating hours (960 hours) then dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the annual operating hours limitation is shown.

e. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 714 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the following from both the pilot flare and process flare: product of the maximum natural gas firing rate (0.9 and 150 mmBtu/hr) multiplied by the AP-42 emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> from Table 1.4-2 dated 7/98 (120,000 lb/mmscf, 0.64 lb/mmscf, and 2.3 lb/mmscf, respectively), multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 310, and 21, respectively from Table A-1 to Subpart A of 40 CFR Part 98). Divide by the average heating value used for AP-42 emission factors in Table 1.-42 dated 7/98 (1,020 Btu/scf), multiply by the maximum annual hours of operation (8,760 and 960 hrs/yr) and divide by 2,000 pounds per ton.

$$\begin{aligned} & \left(150 \frac{\text{mmBtu}}{\text{hr}}\right) \times \left[ \left(120,000 \frac{\text{lb}}{\text{mmscf}} \times (1)\right) + \left(0.64 \frac{\text{lb}}{\text{mmscf}} (310)\right) \right. \\ & \quad \left. + \left(2.3 \frac{\text{lb}}{\text{mmscf}} (21)\right) \right] \times \left(\frac{\text{mmscf}}{1020 \text{mmBtu}}\right) \left(960 \frac{\text{hrs}}{\text{yr}}\right) \times \left(\frac{\text{ton}}{2,000 \text{lb}}\right) \\ & = 252 \frac{\text{tons}}{\text{yr}} \end{aligned}$$

$$\begin{aligned} & \left(0.9 \frac{\text{mmBtu}}{\text{hr}}\right) \times \left[ \left(120,000 \frac{\text{lb}}{\text{mmscf}} \times (1)\right) + \left(0.64 \frac{\text{lb}}{\text{mmscf}} (310)\right) \right. \\ & \quad \left. + \left(2.3 \frac{\text{lb}}{\text{mmscf}} (21)\right) \right] \times \left(\frac{\text{mmscf}}{1020 \text{mmBtu}}\right) \left(8,760 \frac{\text{hrs}}{\text{yr}}\right) \times \left(\frac{\text{ton}}{2,000 \text{lb}}\right) \\ & = 462 \frac{\text{tons}}{\text{yr}} \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/scf CO<sub>2</sub> emission rate does not exceed 120,000 lb/mmscf.

If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/scf CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

f. Emission Limitation:

There shall be no visible emissions from the flare, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22.

g) Miscellaneous Requirements

- (1) None.

**9. P005, Nitric Acid Process**

**Operations, Property and/or Equipment Description:**

Nitric Acid Process with selective catalytic reduction (SCR)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(14) through d)(17).

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) and ORC 3704.03(T)	See b)(2)a.
b.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.5 pounds per ton of nitric acid produced (lb/ton HNO <sub>3</sub> ), 10.0 lbs/hr, and 44.0 tons per rolling, 12-month period.  Carbon dioxide equivalent (CO <sub>2</sub> e) emissions shall not exceed 43,425 tons per rolling, 12-month period.  See b)(2)b. through b)(2)d.
c.	40 CFR Part 60, Subpart Ga (Standards of Performance for Nitric Acid Plants for Which Construction, Reconstruction, or Modification Commenced After October 14, 2011)	See b)(2)f., d)(1) through (13), e)(3) through (7),
d.	ORC 3704.03(F) and OAC rule 3745-114	See d)(14) through d)(16).

(2) Additional Terms and Conditions

a. Compliance with the requirements of this rule for NO<sub>x</sub> emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

b. The NO<sub>x</sub> emissions reflect an 98% control efficiency from selective catalytic reduction (SCR) as identified in the permit application (A0053637) as BACT.

- c. The mass emission rate limitations in b)(1)a. and b)(1)b. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design (i.e., the maximum nitric acid production values identified in e. below).
  - d. The lb/ton emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
    - i. for NO<sub>x</sub> emissions, selective catalytic reduction (SCR); and
    - ii. for GHG emissions, SCR reducing N<sub>2</sub>O by 98% and a 30 ppm emissions limit.
  - e. Based upon design capacity, the maximum HNO<sub>3</sub> production shall not exceed 482 tons per day and 175,820 tons per year.
  - f. NO<sub>x</sub> emissions, expressed as NO<sub>2</sub>, shall not exceed 0.50 pounds (lb) per ton of nitric acid produced, as a 30-day emission rate calculated based on 30 consecutive operating days, the production being expressed as 100 percent nitric acid.
- c) Operational Restrictions
- (1) None.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee must install and operate a NO<sub>x</sub> concentration (ppmv) continuous emissions monitoring system (CEMS). The permittee must also install and operate a stack gas flow rate monitoring system. With measurements of stack gas NO<sub>x</sub> concentration and stack gas flow rate, the permittee will determine hourly NO<sub>x</sub> emissions rate (e.g., lb/hr) and with measured data of the hourly nitric acid production (tons), calculate emissions in units of the applicable emissions limit (lb/ton of 100 percent acid produced). The permittee must operate the monitoring system and report emissions during all operating periods including unit startup and shutdown, and malfunction.
  - (2) The permittee must install, calibrate, maintain, and operate a CEMS for measuring and recording the concentration of NO<sub>x</sub> emissions in accordance with the provisions of §60.13 and Performance Specification 2 of appendix B and Procedure 1 of appendix F of this part. The permittee must use cylinder gas audits to fulfill the quarterly auditing requirement at section 5.1 of Procedure 1 of appendix F of this part for the NO<sub>x</sub> concentration CEMS.
  - (3) For the NO<sub>x</sub> concentration CEMS, use a span value, as defined in Performance Specification 2, section 3.11, of appendix B of this part, of 500 ppmv (as NO<sub>2</sub>). If the permittee emits NO<sub>x</sub> at concentrations higher than 600 ppmv (e.g., during startup or shutdown periods), the permittee must apply a second CEMS or dual range CEMS and a second span value equal to 125 percent of the maximum estimated NO<sub>x</sub> emission

concentration to apply to the second CEMS or to the higher of the dual analyzer ranges during such periods.

- (4) Instead of a NO<sub>x</sub> concentration CEMS meeting Performance Specification 2, the permittee may apply an FTIR CEMS meeting the requirements of Performance Specification 15 of appendix B of this part to measure NO<sub>x</sub> concentrations. Should the permittee use an FTIR CEMS, the permittee must replace the Relative Accuracy Test Audit requirements of Procedure 1 of appendix F of this part with the validation requirements and criteria of Performance Specification 15, sections 11.1.1 and 12.0, of appendix B of this part.
- (5) The permittee shall perform the following monitoring and record keeping requirements contained in 40 CFR, Part 60, Subpart Ga for purposes of demonstrating compliance with the NO<sub>x</sub> emissions, expressed as as NO<sub>2</sub>, shall not exceed 0.50 pounds (lb) per ton of nitric acid produced (100% HNO<sub>3</sub>) emission limitation:
  - a. The permittee shall install, calibrate, maintain, and operate a CEMS for measuring and recording the stack gas flow rates to use in combination with data from the CEMS for measuring emissions concentrations of NO<sub>x</sub> to produce data in units of mass rate (e.g., lb/hr) of NO<sub>x</sub> on an hourly basis. The permittee shall operate and certify the continuous emissions rate monitoring system (CERMS) in accordance with the provisions of §60.13 and Performance Specification 6 of appendix B of this part. The permittee shall comply with the following
    - i. The permittee shall use a stack gas flow rate sensor with a full scale output of at least 125 percent of the maximum expected exhaust volumetric flow rate (see Performance Specification 6, section 8, of appendix B of this part).
    - ii. For conducting the relative accuracy test audits, per Performance Specification 6, section 8.2 of appendix B of this part and Procedure 1, section 5.1.1, of appendix F of this part, the permittee shall use either EPA Reference Method 2, 2F, or 2G of appendix A-4 of this part. You may also apply Method 2H in conjunction with other velocity measurements.
    - iii. The permittee shall verify that the CERMS complies with the quality assurance requirements in Procedure 1 of appendix F of this part. You must conduct relative accuracy testing to provide for calculating the relative accuracy for RATA and RAA determinations in units of lb/hour.
  - b. The permittee shall determine the nitric acid production parameters (production rate and concentration) by installing, calibrating, maintaining, and operating a permanent monitoring system (e.g., weigh scale, volume flow meter, mass flow meter, tank volume) to measure and record the weight rates of nitric acid produced in tons per hour. If the nitric acid production rate measurements are for periods longer than hourly (e.g., daily values), the permittee will determine average hourly production values, tons acid/hr, by dividing the total acid production by the number of hours of process operation for the subject measurement period. The permittee shall comply with the following:

- i. The permittee shall verify that each component of the monitoring system has an accuracy and precision of no more than ±5 percent of full scale.
  - ii. The permittee shall analyze product concentration via titration or by determining the temperature and specific gravity of the nitric acid. The permittee may also use ASTM E1584-11 (incorporated by reference, see §60.17), for determining the concentration of nitric acid in percent. The permittee shall determine product concentration daily.
  - iii. The permittee shall use the acid concentration to express the nitric acid production as 100 percent nitric acid.
  - iv. The permittee shall record the nitric acid production, expressed as 100 percent nitric acid, and the hours of operation.
- c. The permittee shall calculate hourly NO<sub>x</sub> emissions rates in units of the standard (lb/ton acid) for each hour of process operation. For process operating periods for which there is little or no acid production (e.g., startup or shutdown), the permittee shall use the average hourly acid production rate determined from the data collected over the previous 30 days of normal acid production periods (see §60.75a).
- (6) The permittee shall calculate the 30 operating day rolling arithmetic average emissions rate in units of the applicable emissions standard (lb NO<sub>x</sub>/ton 100 percent acid produced) at the end of each operating day using all of the quality assured hourly average CEMS data for the previous 30 operating days.
- a. You must calculate the 30 operating day average emissions rate according to the following equation:

$$E_{30} = k \frac{1}{n} \sum_{i=1}^n C_i Q_i / P_i$$

Where:

E<sub>30</sub> = 30 operating day average emissions rate of NO<sub>x</sub>, lb NO<sub>x</sub>/ton of 100 percent HNO<sub>3</sub>;

C<sub>i</sub> = concentration of NO<sub>x</sub> for hour i, ppmv;

Q<sub>i</sub> = volumetric flow rate of effluent gas for hour i, where C<sub>i</sub> and Q<sub>i</sub> are on the same basis (either wet or dry), scf/hr;

P<sub>i</sub> = total acid produced during production hour i, tons 100 percent HNO<sub>3</sub>;

k = conversion factor, 1.194 × 10<sup>-7</sup> for NO<sub>x</sub>; and

n = number of operating hours in the 30 operating day period, i.e., n is between 30 and 720.

- (7) For each continuous monitoring system, including NO<sub>x</sub> concentration measurement, volumetric flow rate measurement, and nitric acid production measurement equipment, the permittee shall meet the following requirements:
  - a. The permittee shall operate the monitoring system and collect data at all required intervals at all times the affected facility is operating except for periods of monitoring system malfunctions or out-of-control periods as defined in appendix F, sections 4 and 5, of this part, repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments.
  - b. The permittee shall not use data recorded during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. The permittee shall use all the data collected during all other periods in calculating emissions and the status of compliance with the applicable emissions limit in accordance with §60.72a(a).
- (8) For the NO<sub>x</sub> emissions rate, the permittee shall keep records for and results of the performance evaluations of the continuous emissions monitoring systems.
- (9) The permittee shall maintain records of the following information for each 30 operating day period:
  - a. Hours of operation;
  - b. Production rate of nitric acid, expressed as 100 percent nitric acid; and
  - c. 30 operating day average NO<sub>x</sub> emissions rate values.
- (10) The permittee shall maintain records of the following time periods:
  - a. Times when compliance with the emissions standards was not maintained;
  - b. Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> monitoring equipment; and
  - c. Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.
- (11) The permittee shall maintain records of the reasons for any periods of noncompliance and description of corrective actions taken.
- (12) The permittee must maintain records of any modifications to CEMS which could affect the ability of the CEMS to comply with applicable performance specifications.

- (13) For each malfunction, the permittee shall maintain records of the following information:
- a. Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment; and
  - b. Records of actions taken during periods of malfunction to minimize emissions in accordance with §60.11(d), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- (14) The permit-to-install (PTI) application for this emissions unit, P005, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., “8” hours per day and “5” 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: ammonia (NH<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 25.0

Maximum Hourly Emission Rate (lbs/hr): 3.15

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 8.6

MAGLC (ug/m<sup>3</sup>): 414.6

The permittee, has demonstrated that emissions of NH<sub>3</sub>, from emissions unit(s) P005, 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).

- (15) 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:
- 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;
  - 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
  - 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 PTI 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.

- (16) 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.
- (17) 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 quarterly deviation (excursion) reports that identify the following:
- a. all exceedances of the ammonia production values identified in b)(2)e. above.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) The performance test data from the initial and subsequent performance tests and from the performance evaluations of the continuous monitors must be submitted to the

USEPA at the appropriate address as shown in 40 CFR 60.4 and the Ohio EPA Northeast District Office.

- (3) The permittee shall report the following for each 30 operating day period where compliance with the emissions standard was not maintained:
  - a. Time period;
  - b. NO<sub>x</sub> emission rates (lb/ton of acid produced);
  - c. Reasons for noncompliance with the emissions standard; and
  - d. Description of corrective actions taken.
- (4) The permittee shall also report the following whenever they occur:
  - a. Times when the pollutant concentration exceeded full span of the NO<sub>x</sub> pollutant monitoring equipment; and
  - b. Times when the volumetric flow rate exceeded the high value of the volumetric flow rate monitoring equipment.
- (5) The permittee shall report any modifications to CERMS which could affect the ability of the CERMS to comply with applicable performance specifications.
- (6) If a malfunction occurred during the reporting period, the permittee shall submit a report that contains the following:
  - a. The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded; and
  - b. A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with §60.11(d), including actions taken to correct a malfunction.
- (7) Within 60 days of completion of the relative accuracy test audit (RATA) required by this subpart, you must submit the data from that audit to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) ([https://cdx.epa.gov/SSL/cdx/EPA\\_Home.asp](https://cdx.epa.gov/SSL/cdx/EPA_Home.asp)). You must submit performance test data in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (<http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using test methods listed on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) by registered letter to EPA and the same ERT file with the CBI omitted to EPA via CDX as described earlier in this paragraph. Mark the compact disk or other commonly used electronic storage media clearly as CBI and mail to U.S. EPA/OAPQS/CORE CBI Office,



Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. At the discretion of the delegated authority, you must also submit these reports to the Ohio EPA's Northeast District Office. You must submit the other information as required in the performance evaluation as described in §60.2 and as required in this chapter.

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. Emission Limitations:

Nitrogen Oxides (NO<sub>x</sub>) emissions shall not exceed 0.5 pounds per ton of nitric acid produced (lb/ton HNO<sub>3</sub>), 10.0 lbs/hr, and 44.0 tons per rolling, 12-month period.

Applicable Compliance Method:

The hourly NO<sub>x</sub> emission limitation above was developed by multiplying the NO<sub>x</sub> emission factor (0.5 lb of NO<sub>x</sub> per ton of HNO<sub>3</sub> produced) based on the NSPS and BACT analysis by the maximum nitric acid production rate of 20.07 tons per hour.

If required, the permittee shall demonstrate compliance with the lb/mmBtu limitation and hourly emission limitation using Methods 1 thru 4 and 7E of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

b. Emission Limitation:

NO<sub>x</sub> emissions, expressed as as NO<sub>2</sub>, shall not exceed 0.50 pounds (lb) per ton of nitric acid produced, as a 30-day emission rate calculated based on 30 consecutive operating days, the production being expressed as 100 percent nitric acid.

Applicable Compliance Method:

See d)(6) above and f)(2) below.

c. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 43,425 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by multiplying the N<sub>2</sub>O emission factor 30 ppm (per the permit application, based on 98% control efficiency from the catalyst and an exhaust concentration of 30 ppm @ 15% O<sub>2</sub>) by the maximum ammonia production rate of 643,860 tons/yr multiplied by the global warming potential for N<sub>2</sub>O, (298), from Table A-1 to Subpart A of 40 CFR Part 98) and divide by 2,000 pounds per ton.

- (2) The permittee shall conduct an initial performance test to demonstrate compliance with the NO<sub>x</sub> emissions limit under §60.72a(a) beginning in the calendar month following initial certification of the NO<sub>x</sub> and flow rate monitoring CEMS. The initial performance test consists of collection of hourly NO<sub>x</sub> average concentration, mass flow rate recorded with the certified NO<sub>x</sub> concentration and flow rate CEMS and the corresponding acid generation (tons) data for all of the hours of operation for the first 30 days beginning on the first day of the first month following completion of the CEMS installation and certification as described above. You must assure that the CERMS meets all of the data quality assurance requirements as per §60.13 and appendix F, Procedure 1, of this part and you must use the data from the CERMS for this compliance determination.

The permittee shall conduct emissions testing per §60.73a.

g) Miscellaneous Requirements

- (1) None.

**10. P006, Urea Granulation Process**

**Operations, Property and/or Equipment Description:**

Urea Granulation Process with Wet Scrubber

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(5) through d)(8).

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) June 30, 2008	See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM2.5/PM10 or the VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)b.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.11 pound per ton of Granulated Urea, 1.76 lbs/hr, and 7.71 tons per rolling, 12-month period.  Volatile organic compound (VOC) emissions shall not exceed 0.017 lb/ton Granulated Urea produced, 0.3 lb/hr and 1.2 tons per rolling, 12-month period.  Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule.  See b)(2)c. through b)((2)g.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-17-07(A)	The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
e.	OAC rule 3745-17-11(B)(1)	The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
f.	OAC rule 3745-21-09(DD)	See b)(2)i., d)(3) and e)(4)
g.	ORC 3704.03(F) and OAC rule 3745-114	See d)(5) through d)(7).
h.	40 CFR, Part 60, Subpart VVa (40 CFR 60.480a - 60.489a)  Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006	See b)(2)j., d)(4), e)(5) and f)(2).

(2) Additional Terms and Conditions

- a. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- c. The mass emission rate limitations in b)(1)a. and b)(1)b. above represent the potentials to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design (i.e., the maximum volume of granulated urea produced identified in b)(2)h. below).
- d. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.
- e. The PM emissions reflect an 80% control efficiency from the wet scrubber as identified in the permit application (A0053637) as BACT.
- f. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.

- g. The lb/ton emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for PE and VOC emissions for this emissions unit was determined to be the following:
  - i. the use of a wet scrubber.
- h. Based upon design capacity, the maximum volume of granulated urea produced by this emissions unit shall not exceed 384 tons per day and 140,160 tons per year.
- i. The permittee shall comply with the applicable requirements under OAC rule 3745-21-09(DD), including the following sections:

OAC rule 3745-21-09(DD)(1)	Compliance requirements
OAC rule 3745-21-09(DD)(3)	Compressors
OAC rule 3745-21-09(DD)(4)	Pressure relief devices in gas/vapor service
OAC rule 3745-21-09(DD)(5)	Sampling connection systems
OAC rule 3745-21-09(DD)(6)	Open-ended valves or lines
OAC rule 3745-21-09(DD)(7)	Equipment designated for no detectable emissions
OAC rule 3745-21-09(DD)(8)	Barrier fluid systems and sensors for pumps and compressors
OAC rule 3745-21-09(DD)(9)	Closed vent systems
OAC rule 3745-21-09(DD)(10)	Control equipment
OAC rule 3745-21-09(DD)(11)	Delay of repair
OAC rule 3745-21-09(DD)(16)	Equivalent requirements
OAC rule 3745-21-09(DD)(17)	Exemptions
OAC rule 3745-21-09(DD), Appendix A	List of organic chemicals for which paragraph (DD) of Rule 3745-21-09 is applicable

- j. The permittee shall comply with the applicable restrictions required under 40 CFR Part 60, Subpart VVa, including the following sections:

60.482-1a	Standards: General
60.482-2a	Standards: Pumps in light liquid service
60.482-3a	Standards: Compressors
60.482-4a	Standards: Pressure relief devices in gas/vapor service
60.482-5a	Standards: Sampling connection systems
60.482-6a	Standards: Open-ended valves or lines
60.482-7a	Standards: Valves in gas/vapor service and in light liquid service
60.482-8a	Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.
60.482-9a	Standards: Delay of repair
60.482-10a	Standards: Closed vent systems and control devices
60.483-1a	Alternative standards for valves--allowable percentage of valves leaking
60.483-2a	Alternative standards for valves--skip period leak detection and repair.

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge) and the scrubber liquid flow rate (in gallons per minute) during operation of this/these emissions unit(s), including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's flow rate on daily basis.

The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the 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 pressure drop and flow rate 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.

These range(s) and/or limit(s) for the pressure drop and liquid flow rate 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 to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (3) The permittee shall comply with the applicable monitoring and record keeping requirements under OAC rule 3745-21-09(DD), including the following sections:

OAC rule 3745-21-09(DD)(2)	Leak detection and repair program
OAC rule 3745-21-09(DD)(12)	Alternative monitoring schedule for valves based on a skip period
OAC rule 3745-21-09(DD)(13)	Alternative monitoring standard for valves based on the allowable percentage of valves leaking
OAC rule 3745-21-09(DD)(14)	Record keeping

- (4) The permittee shall comply with the applicable monitoring and record keeping requirements under 40 CFR Part 60, Subpart VV, including the following sections:

60.486a(a) through 60.486a(k)	Monitoring equipment  Identification of leaking components  Maintain log of all leaking components. repair attempts and repair methods  Maintain schematics, including piping and instrumentation diagrams  Maintain lists of unsafe to monitor and difficult to monitor components  Maintain monitoring schedule  Maintain list of process unit shut downs that occur during monitoring periods
-------------------------------	--

- (5) The permit-to-install (PTI) application for this emissions unit, P006, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., "8" hours per day and "5" 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: ammonia (NH<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 25.0

Maximum Hourly Emission Rate (lbs/hr): 5.6

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 19.2

MAGLC (ug/m<sup>3</sup>): 414.6

The permittee, has demonstrated that emissions of NH<sub>3</sub>, from emissions unit(s) P006, 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).

- (6) 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 PTI 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.

- (7) 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.
  - (8) 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 quarterly deviation (excursion) reports that identify the following:
    - a. all exceedances of the granulated urea production value identified in b)(2)h. above.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.
  - (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
    - a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber and/or the liquid flow rate was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
    - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
    - 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, that would bring the pressure drop and/or liquid flow rate into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) The permittee shall comply with the applicable reporting requirements under OAC rule 3745-21-09(DD), including the following section:

OAC rule 3745-21-09(DD)(15)	<p>Compliance test results reported within 30 days after test date</p> <p>Compliance test results shall be included in the semiannual reports</p> <p>Semiannual reports shall be submitted by the first day of February and August and submitted to the Ohio EPA Northeast District Office</p>
-----------------------------	--

- (4) The permittee shall submit semiannual reports and such other notifications and reports to the Ohio EPA, Northeast District Office, as are required pursuant to 40 CFR Part 60, Subpart VV, per the following sections:

60.487a(a) through 60.487a(f)	<p>Number of each type of component monitored each month</p> <p>Number of leaks for each type of component</p> <p>Number of components not repaired within the required time period</p> <p>Explanation for each delay of repair</p> <p>List of process unit shut downs</p>
-------------------------------	--

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:

Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.11 lb/ton Granulated Urea, 1.8 lbs/hr, and 7.7 tons per rolling, 12-month period.

Applicable Compliance Method:

The hourly PM emission limitation above was developed by multiplying the PM emission factor (0.11 lb per ton of ANS) based on BACT analysis (also takes into account a wet scrubber control efficiency of 80%) by the maximum granulated urea production rate of 16.0 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 10 of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation (1.8 lbs/hr) by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

b. Emission Limitations:

Volatile organic compound (VOC) emissions shall not exceed 0.017 lb/ton Granulated Urea produced, 0.3 lb/hr and 1.2 tons per rolling, 12-month period.

Applicable Compliance Method:

The hourly VOC emission limitation above was developed by multiplying the VOC emission factor (0.017 lb per ton of Granulated Urea produced) based on the BACT analysis by the maximum ammonia production rate of 16.0 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 18, 25, or 25A, as applicable, of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitation:

Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule.



Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

- (2) The permittee shall comply with the applicable testing requirements under 40 CFR Part 60, Subpart VV, including the following sections:

60.485(a) through 60.485(h)	Reference methods for sample equipment used to detect component VOC leaks
-----------------------------	---

g) Miscellaneous Requirements

- (1) None.

**11. P007, Urea Synthesis (Melt)**

**Operations, Property and/or Equipment Description:**

Urea Synthesis (Melt) with Wet Scrubber

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(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) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM2.5/PM10 emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.004 pounds per ton of Granulated Urea, 0.064 lb/hr, and 0.3 ton per rolling, 12-month period.  Carbon dioxide equivalent (CO <sub>2e</sub> ) emissions shall not exceed 128.0 tons per rolling, 12-month period.  Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule.  See b)(2)d. through b)(2)h.
d.	OAC rule 3745-31-05(D)	See b)(2)i.
e.	OAC rule 3745-17-07(A)	The emission limitation specified by this

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
f.	OAC rule 3745-17-11(B)(1)	The emission limitation specified by this rule is less stringent than the limitation established by OAC rule 3745-31-10 through 20.
g.	ORC 3704.03(F) and OAC rule 3745-114	See d)(4).

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for PE emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The mass emission rate limitations in b)(1)c. above represent the potential to emit (PTE), defined as the maximum capacity to emit an air pollutant under the physical and operational design (i.e., the maximum volume of granulated urea produced identified in b)(2)i. below).
- e. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.
- f. The PM and CO<sub>2e</sub> emissions reflect an 80% control efficiency from the wet scrubber as identified in the permit application (A0053637) as BACT.
- g. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- h. The lb/ton emission limitation is based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for PE for this emissions unit was determined to be the following:
  - i. for PE, the use of a wet scrubber; and
  - ii. for GHG emissions, good operational practices and energy efficient operation.

- i. Based upon design capacity, the maximum volume of granulated urea produced by this emissions unit shall not exceed 384 tons per day and 140,160 tons per year.
- c) Operational Restrictions
  - (1) None.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall maintain daily records of the following information:
    - a. the amount of granulated urea produced (tons); and
    - b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the amount of granulated urea produced.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative amount of granulated urea produced for each calendar day.

- (2) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (3) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge) and the scrubber liquid flow rate (in gallons per minute) during operation of this/these emissions unit(s), including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's flow rate on daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the 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 pressure drop and flow rate 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.

These range(s) and/or limit(s) for the pressure drop and liquid flow rate 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 to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (4) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual controlled emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install/operate (PTIO) 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 toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.

- e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the granulated urea production values identified in b)(2)i. above.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) 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.

- (3) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

- a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber and/or the liquid flow rate was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
- b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
- 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, that would bring the pressure drop and/or liquid flow rate into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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:

Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed



0.004 pounds per ton of Granulated Urea, 0.7 lb/hr, and 0.3 ton per rolling, 12-month period.

Applicable Compliance Method:

The hourly PM emission limitation above was developed by multiplying the PM emission factor (0.004 lb per ton of Granulated Urea) based on BACT analysis (also takes into account a wet scrubber control efficiency of 80%) by the maximum granulated urea production rate of 16.0 tons per hour.

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Method 1 through 4, and 10 of 40 CFR, Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the hourly emission limitation (0.7 lb/hr) by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/hr emission limitation, compliance with the annual emission limitation shall also be demonstrated.

b. Emission Limitation:

Visible particulate emissions (PE) shall not exceed 5% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

c. Emission Limitation:

Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 128 tons per rolling, 12-month period.

Applicable Compliance Method:

This emission limitation was established to reflect the potential to emit for this emissions unit by multiplying the CO<sub>2</sub> emission factor 1.83 lbs/ton granular urea (AP-42, Table 8.2-1 then accounting for the wet scrubber control efficiency of 80%) by the maximum ammonia production rate of 140,160 tons/yr multiplied by the global warming potential for CO<sub>2</sub>, (1), from Table A-1 to Subpart A of 40 CFR Part 98) and divide by 2,000 pounds per ton.

g) Miscellaneous Requirements

- (1) None.

**12. P008, Emergency Fire Pump Diesel Engine**

**Operations, Property and/or Equipment Description:**

460 HP - 343 kW Emergency Fire Pump Diesel Engine

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) 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.	OAC rule 3745-31-05(A)(3) June 30, 2008	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 0.005 lb/hr and 3.0E-04 ton/yr.  See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , PM <sub>10</sub> , NO <sub>x</sub> , CO, SO <sub>2</sub> , or VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 3.5 g/kW-hr, 2.6 pounds per hour (lbs/hr), and 0.13 ton per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.4 g/kW-hr, 0.3 lb/hr, and 0.02 ton per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed 0.02 g/kW-hr, 0.02 lb/hr, and 0.001 ton per rolling, 12-month period.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Volatile organic compound (VOC) emissions shall not exceed 0.19 g/kW-hr, 0.14 lb/hr, and 0.007 ton per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 123 tons per rolling, 12-month period.</p> <p>See b)(2)d. and b)(2)e.</p>
d.	OAC rule 3745-31-05(D)	See c)(1).
e.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
f.	OAC rule 3745-17-11(B)(5)(a)	See b)(2)f.
g.	OAC rule 3745-110-03(J)(16) and (J)(19)	Exemption. See b)(2)g.
h.	40 CFR Part 60, Subpart A (40 CFR 60.1 - 60.19)	Table 8 to Subpart III of 40 CFR Part 60 – Applicability of General Provisions to Subpart III shows which parts of the General Provisions in 40 CFR 60.1 - 60.19 apply.
i.	<p>40 CFR Part 60, Subpart III (40 CFR 60.4200–4219)</p> <p>[In accordance with 40 CFR 60.4200(a)(2), this emissions unit is a compression ignition stationary internal combustion fire pump engine for which construction commenced after July 11, 2005 subject to the emissions limitation/control measures specified in this section.]</p>	<p>Non-methane hydrocarbon (NMHC) + NO<sub>x</sub> emissions shall not exceed 4.0 g/kW-hr.</p> <p>CO emissions shall not exceed 3.5 g/kW-hr.</p> <p>PM emissions shall not exceed 0.2 g/kW-hr.</p> <p>See b)(2)h.</p> <p>[60.4205(c) and 60.4207(b)]</p>
j.	<p>40 CFR Part 63, Subpart ZZZZ (40 CFR 63.6580-63.6675)</p> <p>[In accordance with 40 CFR 63.6590(c)(1), this emissions unit is a new stationary reciprocating internal combustion engine (RICE) located at an area source of HAP emissions subject to the emissions limitation/control measures specified in this section.]</p>	<p>See b)(2)i.</p> <p>[63.6590(c), (c)(2)]</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
k.	40 CFR Part 63, Subpart A (40 CFR 63.1 - 63.16)	Table 8 to Subpart ZZZZ of 40 CFR Part 63 – Applicability of General Provisions to Subpart ZZZZ shows which parts of the General Provisions in 40 CFR 63.1 - 63.16 apply.

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emission limitations include both filterable and condensable particulate emissions.
- e. The g/kW-hr emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for PE, CO, NO<sub>x</sub>, VOC, and GHG emissions, good combustion control and operating practices and engines designed to meet the standards of 40 CFR Part 60, Subpart IIII.
- f. The emission limitation required by this applicable rule is less stringent than the emission limitation established by OAC rule 3745-31-10 through 20.
- g. The requirements of this rule do not apply, since:
  - i. NO<sub>x</sub> emissions are restricted to less than 25 tons per year; and
  - ii. the emissions unit is subject to a BACT limitation for NO<sub>x</sub>.
- h. The permittee shall only combust ultra low sulfur diesel fuel in this emissions unit meeting the following per gallon standards:
  - i. 15 ppm maximum sulfur content; and
  - ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

- i. This emissions unit must meet the requirements of 40 CFR Part 60, Subpart IIII. No further requirements apply under this subpart.

c) **Operational Restrictions**

- (1) The maximum annual operating hours for this emissions unit shall not exceed 100 hours, based upon a rolling, 12-month summation of the operating hours.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the operating hours levels specified in the following table:

<b>Month(s)</b>	<b>Cumulative Operating Hours</b>
1	12
1-2	20
1-3	28
1-4	36
1-5	44
1-6	52
1-7	60
1-8	68
1-9	76
1-10	84
1-11	92
1-12	100

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

- (2) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall maintain monthly records of the following information:
  - a. the operating hours for each month; and

- b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative operating hours for each calendar month.

- (2) For each shipment of ultra low sulfur diesel fuel received for burning in this emissions unit, the permittee shall maintain records of the oil supplier's (or permittee's) analyses for sulfur content in parts per million (40 CFR 80.510). The permittee shall perform or require the supplier to perform the analyses for sulfur content in accordance with 40 CFR 80.585.
- (3) The permittee shall also maintain documentation of supplier verification that the ultra low sulfur diesel fuel as purchased has a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
- (4) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation;

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. each shipment of ultra low sulfur diesel fuel received for burning in this emissions unit which did not comply with the per gallon standards specified in b)(2); and
  - b. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).
- (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

CO emissions shall not exceed 3.5 g/kW-hr, 2.6 lbs/hr, and 0.13 ton per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on the standard specified in Table 4 to 40 CFR Part 60, Subpart IIII. The hourly emission limitation was developed by multiplying the maximum operating load (343 kW) by the g/kW-hr CO emission factor from 40 CFR 1039.101 Table 1 for Tier 4 engines (3.5 g/kW-hr) then dividing by (454 g/lb).

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 thru 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (2.6 lbs/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 0.4 g/kW-hr, 0.3 lb/hr, and 0.02 ton per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on 40 CFR 1039.101 Table 1: Tier 4 Exhaust Emission Standards After The 2014 Model Year. The hourly emission limitation was developed by multiplying the maximum operating load (343 kW) by the g/kW-hr NO<sub>x</sub> emission factor (0.4 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 thru 4 and 7E of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.03 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual

limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

c. Emission Limitation:

PM<sub>10</sub>/PM<sub>2.5</sub> emissions shall not exceed 0.02 g/kW-hr, 0.02 lb/hr, and 0.001 ton per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on the standard specified in Table 4 to 40 CFR Part 60, Subpart IIII. The hourly emission limitation was developed by multiplying the maximum operating load (343 kW) by the PM<sub>10</sub>/PM<sub>2.5</sub> emission factor from 40 CFR 1039.101 Table 1 for Tier 4 engines (0.02 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 201 or 201A and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.02 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

d. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 0.005 lb/hr and 3.0E-04 ton/yr.

Applicable Compliance Method:

The hourly emission limitation is based on multiplying the AP-42 emission factor for SO<sub>2</sub> from AP-42 Table 3.4-1 dated 10/96 when burning diesel fuel with a maximum sulfur content of 15 ppmw (0.0015 lb/mmBtu) by the maximum heat input capacity of 3.2 mmBtu/hr.

If required, the permittee shall demonstrate compliance with the hourly emission limitation using Methods 1 thru 4 and 6C of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.005 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

e. Emission Limitation:

VOC emissions shall not exceed 0.19 g/kW-hr, 0.1 lb/hr, and 0.007 ton/yr as a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

The g/kW-hr limitation is based on 40 CFR 1039.101 Table 1: Tier 4 Exhaust Emission Standards After the 2014 Model Year. The hourly emission limitation was developed by multiplying the maximum operating load (343 kW) by the g/kW-hr VOC emission factor (0.19 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.1 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

f. Emission Limitation:

CO<sub>2</sub>e emissions shall not exceed 123 tons per rolling, 12-month period.

Applicable Compliance Method:

This emissions limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the maximum capacity (460 hp) by the emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 298, and 25, respectively from Table A-1 to Subpart of 40 CFR 98). Multiply the sum by the maximum annual hours of operation (100 hrs/yr) and divide by 2,000 pounds per ton. The CO<sub>2</sub> emission factor was obtained from AP-42 Table 3.3-1 dated 10/96 (1.15 lb/hp-hr). The N<sub>2</sub>O emission factor was obtained from Table C-2 to Subpart C of 40 CFR 98 (0.6 g/mmBtu). The CH<sub>4</sub> emission factor was obtained from AP-42 Table 3.3-1 dated 10/96 (2.47E-03 lb TOC/hp-hr (0.09 lb CH<sub>4</sub>/lb TOC)= 2.223E-04 lb CH<sub>4</sub>/hp-hr, this table did not include an estimate of how much methane comprises the TOC emission factor, so the value of 9% from AP-42 Table 3.4-1 dated 10/96 was used).

$$(460 \text{ hp}) \times \left[ \left( 1.15 \frac{\text{lb}}{\text{hp-hr}} (1) \right) + \left( \left( 0.6 \frac{\text{g}}{\text{mmBtu}} \right) \left( 7000 \frac{\text{Btu}}{\text{hp-hr}} \right) \left( \frac{\text{mmBtu}}{1\text{E}06\text{Btu}} \right) \left( \frac{\text{lb}}{454\text{g}} \right) (298) \right) \right. \\ \left. + \left( 2.223\text{E} - 04 \frac{\text{lb}}{(\text{hp-hr})} \right) (25) \right] \times \left( 100 \frac{\text{hrs}}{\text{hr}} \right) \times \left( \frac{\text{ton}}{2,000\text{lb}} \right) = 123 \text{ tons/yr}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/hp-hr CO<sub>2</sub> emission rate does not exceed 2.223E-04 lb/hp-hr. If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/hp-hr CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation:

The permittee shall only combust ultra low sulfur diesel fuel in this emissions unit meeting the following per gallon standard: 15 ppm maximum sulfur content

Applicable Compliance Method:

The records required by d)(2) shall be used to demonstrate compliance.

h. Emission Limitation:

The permittee shall only combust diesel fuel in this emissions unit meeting the following per gallon standard: a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

Applicable Compliance Method:

The records required by d)(2) and d)(3) shall serve as demonstration of compliance.

i. Emission Limitation:

Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

j. Emission Limitation:

NMHC + NO<sub>x</sub> emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).

CO emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr).

PM emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr).

Applicable Compliance Method:

According to 40 CFR 60.4211(c), the permittee shall demonstrate compliance with these emission limitations by purchasing an engine certified to the emission



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

standards in 40 CFR 60.4205(c) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g).

g) Miscellaneous Requirements

- (1) None.

**13. P009, Emergency Generator**

**Operations, Property and/or Equipment Description:**

5,000 HP – 3,729 kW Emergency Generator Diesel Engine

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) 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.	OAC rule 3745-31-05(A)(3) June 30, 2008	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 0.05 lb/hr and 0.003 ton/yr.  See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , PM <sub>10</sub> , NO <sub>x</sub> , CO, SO <sub>2</sub> , or VOC emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 3.5 g/kW-hr, 28.8 pounds per hour (lbs/hr), and 1.4 tons per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.67 g/kW-hr, 5.5 lbs/hr, and 0.3 ton per rolling, 12-month period.  Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) and particulate matter less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed 0.03 g/kW-hr, 0.2 lb/hr, and 0.01 ton per rolling, 12-month period.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>Volatile organic compound (VOC) emissions shall not exceed 0.19 g/kW-hr, 1.6 lbs/hr, and 0.08 ton per rolling, 12-month period.</p> <p>Carbon dioxide equivalent (CO<sub>2</sub>e) emissions shall not exceed 1,289 tons per rolling, 12-month period.</p> <p>See b)(2)d. and b)(2)e.</p>
d.	OAC rule 3745-31-05(D)	See c)(1).
e.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
f.	OAC rule 3745-17-11(B)(5)(a)	See b)(2)f.
g.	OAC rule 3745-110-03(J)(16) and (J)(19)	Exemption. See b)(2)g.
h.	40 CFR Part 60, Subpart A (40 CFR 60.1 - 60.19)	Table 8 to Subpart III of 40 CFR Part 60 – Applicability of General Provisions to Subpart III shows which parts of the General Provisions in 40 CFR 60.1 - 60.19 apply.
i.	<p>40 CFR Part 60, Subpart III (40 CFR 60.4200–4219)</p> <p>[In accordance with 40 CFR 60.4200(a)(2), this emissions unit is a compression ignition stationary internal combustion fire pump engine for which construction commenced after July 11, 2005 subject to the emissions limitation/control measures specified in this section.]</p>	<p>Non-methane hydrocarbon (NMHC) + NO<sub>x</sub> emissions shall not exceed 6.4 g/kW-hr.</p> <p>CO emissions shall not exceed 3.5 g/kW-hr.</p> <p>PM emissions shall not exceed 0.2 g/kW-hr.</p> <p>See b)(2)h.</p> <p>[60.4205(c) and 60.4207(b)]</p>
j.	<p>40 CFR Part 63, Subpart ZZZZ (40 CFR 63.6580-63.6675)</p> <p>[In accordance with 40 CFR 63.6590(c)(1), this emissions unit is a new stationary reciprocating internal combustion engine (RICE) located at an area source of HAP emissions subject to the emissions limitation/control measures specified in this section.]</p>	<p>See b)(2)i.</p> <p>[63.6590(c), (c)(2)]</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
k.	40 CFR Part 63, Subpart A (40 CFR 63.1 - 63.16)	Table 8 to Subpart ZZZZ of 40 CFR Part 63 – Applicability of General Provisions to Subpart ZZZZ shows which parts of the General Provisions in 40 CFR 63.1 - 63.16 apply.

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for CO, NO<sub>x</sub>, PM<sub>10</sub>/PM<sub>2.5</sub>, and VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emission limitations include both filterable and condensable particulate emissions.
- e. The g/kW-hr emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for this emissions unit was determined to be the following:
  - i. for PE, CO, NO<sub>x</sub>, VOC, and GHG emissions, good combustion control and operating practices and engines designed to meet the standards of 40 CFR Part 60, Subpart IIII.
- f. The maximum annual operating hours for this emissions unit shall not exceed 100 hours, based upon a rolling, 12-month summation of the operating hours.
- g. The emission limitation required by this applicable rule is less stringent than the emission limitation established by OAC rule 3745-31-10 through 20.
- h. The requirements of this rule do not apply, since:
  - i. NO<sub>x</sub> emissions are restricted to less than 25 tons per year; and
  - ii. the emissions unit is subject to a BACT limitation for NO<sub>x</sub>.
- i. The permittee shall only combust ultra low sulfur diesel fuel in this emissions unit meeting the following per gallon standards:
  - i. 15 ppm maximum sulfur content; and

- ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
- j. This emissions unit must meet the requirements of 40 CFR Part 60, Subpart IIII. No further requirements apply under this subpart.

c) **Operational Restrictions**

- (1) The maximum annual operating hours for this emissions unit shall not exceed 100 hours, based upon a rolling, 12-month summation of the operating hours.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the operating hours levels specified in the following table:

<b>Month(s)</b>	<b>Cumulative Operating Hours</b>
1	12
1-2	20
1-3	28
1-4	36
1-5	44
1-6	52
1-7	60
1-8	68
1-9	76
1-10	84
1-11	92
1-12	100

After the first 12 calendar months of operation, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

- (2) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).

d) **Monitoring and/or Recordkeeping Requirements**

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

- a. the operating hours for each month; and
- b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative operating hours for each calendar month.

- (2) For each shipment of ultra low sulfur diesel fuel received for burning in this emissions unit, the permittee shall maintain records of the oil supplier's (or permittee's) analyses for sulfur content in parts per million (40 CFR 80.510). The permittee shall perform or require the supplier to perform the analyses for sulfur content in accordance with 40 CFR 80.585.
- (3) The permittee shall also maintain documentation of supplier verification that the ultra low sulfur diesel fuel as purchased has a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
- (4) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation;

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. each shipment of ultra low sulfur diesel fuel received for burning in this emissions unit which did not comply with the per gallon standards specified in b)(2); and
  - b. all exceedances of the rolling, 12-month limitation on the hours of operation for this emissions unit; and for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative hours of operation.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (3) See 40 CFR Part 60, Subpart IIII (40 CFR 60.4200-4219).
- (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

CO emissions shall not exceed 3.5 g/kW-hr, 28.8 lbs/hr, and 1.4 tons per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on the standard specified in Table 4 to 40 CFR Part 60, Subpart IIII. The hourly emission limitation was developed by multiplying the maximum operating load (3729 kW) by the g/kW-hr CO emission factor from 40 CFR 1039.101 Table 1 for Tier 4 engines (3.5 g/kW-hr) then dividing by (454 g/lb).

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 thru 4 and 10 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (28.8 lbs/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 0.67 g/kW-hr, 5.5 lbs/hr, and 0.3 ton per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on 40 CFR 1039.101 Table 1: Tier 4 Exhaust Emission Standards After The 2014 Model Year. The hourly emission limitation was developed by multiplying the maximum operating load (3729 kW) by the g/kW-hr NO<sub>x</sub> emission factor (0.67 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 thru 4 and 7E of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (5.5 lbs/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual

limitation shall be demonstrated if compliance with the hourly limitation and operating hours restriction is shown.

c. Emission Limitation:

PM<sub>10</sub>/PM<sub>2.5</sub> emissions shall not exceed 0.03 g/kW-hr, 0.2 lb/hr, and 0.01 ton per rolling, 12-month period.

Applicable Compliance Method:

The g/kW-hr limitation is based on the standard specified in Table 4 to 40 CFR Part 60, Subpart IIII. The hourly emission limitation was developed by multiplying the maximum operating load (3729 kW) by the PM<sub>10</sub>/PM<sub>2.5</sub> emission factor from 40 CFR 1039.101 Table 1 for Tier 4 engines (0.03 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 201 or 201A and 202 of 40 CFR Part 51, Appendix M. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.2 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation is shown.

d. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 0.05 lb/hr and 0.003 ton/yr.

Applicable Compliance Method:

The hourly emission limitation is based on multiplying the AP-42 emission factor for SO<sub>2</sub> from AP-42 Table 3.4-1 dated 10/96 when burning diesel fuel with a maximum sulfur content of 15 ppmw (0.0015 lb/mmBtu) by the maximum heat input capacity of 35 mmBtu/hr.

If required, the permittee shall demonstrate compliance with the hourly emission limitation using Methods 1 thru 4 and 6C of 40 CFR Part 60, Appendix A. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (0.05 lb/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation is shown.

e. Emission Limitation:

VOC emissions shall not exceed 0.19 g/kW-hr, 1.6 lbs/hr, and 0.08 ton/yr as a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

The g/kW-hr limitation is based on 40 CFR 1039.101 Table 1: Tier 4 Exhaust Emission Standards After the 2014 Model Year. The hourly emission limitation was developed by multiplying the maximum operating load (3729 kW) by the g/kW-hr VOC emission factor (0.19 g/kW-hr) divided by (454 g/lb) to determine the hourly emissions.

If required, the permittee shall demonstrate compliance with the g/kW-hr limitation and hourly emission limitation using Methods 1 through 4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A. Use of Method 18, 25 or 25A is to be selected based on the results of pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

The annual emission limitation was developed by multiplying the hourly emission limitation (1.6 lbs/hr) by the maximum annual operating hours (100 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance with the annual limitation shall be demonstrated if compliance with the hourly limitation is shown.

f. Emission Limitation:

CO<sub>2</sub>e emissions shall not exceed 1,289 tons per rolling, 12-month period.

Applicable Compliance Method:

This emissions limitation was established to reflect the potential to emit for this emissions unit by calculating the sum of the maximum capacity (5,000 hp) by the emission factors for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>, multiplied by the global warming potentials for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> (1, 298, and 25, respectively from Table A-1 to Subpart of 40 CFR 98). Multiply the sum by the maximum annual hours of operation (100 hrs/yr) and divide by 2,000 pounds per ton. The CO<sub>2</sub> emission factor was obtained from AP-42 Table 3.3-1 dated 10/96 (1.15 lb/hp-hr). The N<sub>2</sub>O emission factor was obtained from Table C-2 to Subpart C of 40 CFR 98 (0.6 g/mmBtu). The CH<sub>4</sub> emission factor was obtained from AP-42 Table 3.3-1 dated 10/96 (2.47E-03 lb TOC/hp-hr (0.09 lb CH<sub>4</sub>/lb TOC)= 2.223E-04 lb CH<sub>4</sub>/hp-hr, this table did not include an estimate of how much methane comprises the TOC emission factor, so the value of 9% from AP-42 Table 3.4-1 dated 10/96 was used).

$$\begin{aligned}
 & (5,000 \text{ hp}) \times \left[ \left( 1.15 \frac{\text{lb}}{\text{hp-hr}} (1) \right) \right. \\
 & \quad + \left( \left( 0.6 \frac{\text{g}}{\text{mmBtu}} \right) \left( 7000 \frac{\text{Btu}}{\text{hp-hr}} \right) \left( \frac{\text{mmBtu}}{1E06 \text{ Btu}} \right) \left( \frac{\text{lb}}{454 \text{ g}} \right) (298) \right) \\
 & \quad \left. + \left( 2.223E-04 \frac{\text{lb}}{\text{hp-hr}} \right) (25) \right] \times \left( 100 \frac{\text{hrs}}{\text{hr}} \right) \times \left( \frac{\text{ton}}{2,000 \text{ lb}} \right) \\
 & = 1,289 \text{ tons/yr}
 \end{aligned}$$

Since the CO<sub>2</sub>e emissions are estimated to consist of more than 99% CO<sub>2</sub>, compliance with this emission limitation will be assumed provided that the lb/hp-hr CO<sub>2</sub> emission rate does not exceed 2.223E-04 lb/hp-hr. If required, the permittee shall conduct emissions testing using Methods 1, 2, 3A and 4 of 40 CFR Part 60, Appendix A to determine the lb/hp-hr CO<sub>2</sub> emission rate. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

g. Emission Limitation:

The permittee shall only combust ultra low sulfur diesel fuel in this emissions unit meeting the following per gallon standard: 15 ppm maximum sulfur content

Applicable Compliance Method:

The records required by d)(2) shall be used to demonstrate compliance.

h. Emission Limitation:

The permittee shall only combust diesel fuel in this emissions unit meeting the following per gallon standard: a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.

Applicable Compliance Method:

The records required by d)(2) and d)(3) shall serve as demonstration of compliance.

i. Emission Limitation:

Visible particulate emissions from the stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance based upon an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

j. Emission Limitation:

NMHC + NO<sub>x</sub> emissions shall not exceed 6.4 g/kW-hr (3.0 g/hp-hr).

CO emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr).

PM emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr).

Applicable Compliance Method:

According to 40 CFR 60.4211(c), the permittee shall demonstrate compliance with these emission limitations by purchasing an engine certified to the emission



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

standards in 40 CFR 60.4205(c) for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in 40 CFR 60.4211(g).

g) Miscellaneous Requirements

- (1) None.

**14. Emissions Unit Group – P010 and P011**

**Operations, Property and/or Equipment Description:**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
P010	5 Cell Process Cooling Water Tower 1 with Drift Eliminator
P011	5 Cell Process Cooling Water Tower 2 with Drift Eliminator

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , or PM <sub>10</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rules 3745-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) shall not exceed 0.3 pound per hour (lb/hr) and 1.3 tons per rolling, 12-month period.  Particulate matter emissions less than 2.5 microns in diameter (PM <sub>2.5</sub> ) shall not exceed 0.0018 lb/hr and 0.01 tons per rolling, 12-month period.  The permittee shall install a drift eliminator with a maximum drift rate of 0.0005% on this emissions unit.  Visible particulate emissions shall not



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		exceed 10% opacity as a 6-minute average. The presence of condensed water vapor shall not be deemed a violation for failure of stack emissions meeting this visible emission limitation.  See b)(2)e. and c)(1)
d.	OAC rule 3745-17-07(A)(1)	See b)(2)d.
e.	OAC rule 3745-17-11(B)	See b)(2)d.

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for PM10/PM2.5 emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The emission limitation specified by this rule is less stringent than the emission limitation established by OAC rule 3745-31-10 through 20.
- e. The lb/hr emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for PE for this emissions unit was determined to be the following:
  - i. the use of drift eliminators with a maximum drift rate specification of 0.0005 percent or less.

c) Operational Restrictions

- (1) The permittee shall maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 5,000 milligrams per liter (mg/l).

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain a conductivity meter or other equipment to continuously monitor and record the TDS concentration of the cooling tower water. The monitoring devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

- (2) Since the TDS data measured by the conductivity meter or other equipment is based on a correlation between conductivity and TDS, an exceedance measured by the conductivity meter or equivalent is not a violation of the TDS operational restriction, but rather serves as an indicator to initiate corrective action by the permittee to reduce the TDS concentration.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify all hourly TDS readings in excess of 5,000 mg/l. The reports shall identify corrective action taken to reduce the TDS concentration.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit

- (2) Prior to startup, the permittee shall submit written documentation provided by the vendor/manufacturer, of the maximum drift rate of 0.0005% for the drift eliminator and the premise, basis, and justification for the drift rate.
- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

PM<sub>10</sub> emissions shall not exceed 0.3 lb/hr and 1.3 tons per rolling, 12-month period.

Applicable Compliance Method:

The PM emissions are based on multiplying the maximum re-circulating water flow rate (79,800 gal/min) by the maximum TDS concentration (5,000 mg/l) multiplied by 3.785 l/gal multiplied by the decimal fraction drift rate per flow (0.0005/100) multiplied by 60 min/hr divided by 453,592 mg/lb.

\*The lb/hr PM<sub>10</sub> emissions limitation is 1.0 lb PM/hr multiplied by 30% (0.30). The annual emission limitation is based on multiplying the hourly emission limitation (0.3 lb/hr) by the maximum annual hours of operation (8,760 hrs/yr) and dividing by (2,000 lbs/ton).

Compliance with the hourly and annual emissions limitation will be assumed provided that the TDS concentration recorded in d) remains below 3,075 mg/l.

b. Emission Limitation:

PM<sub>2.5</sub> emissions shall not exceed 0.0018 lb/hr and 0.01 ton/yr

Applicable Compliance Method:

The PM emissions are based on multiplying the maximum re-circulating water flow rate (79,800 gal/min) by the maximum TDS concentration (5,000 mg/l) multiplied by 3.785 l/gal multiplied by the decimal fraction drift rate per flow (0.0005/100) multiplied by 60 min/hr divided by 453,592 mg/lb.

\*\*The lb/hr PM<sub>2.5</sub> emissions limitation is calculated by multiplying 1.0 lb PM/hr by 0.177% (0.00177). The annual emission limitation is based on multiplying the hourly emission limitation (0.0018 lb/hr) by the maximum annual hours of operation (8,760 hrs/yr) and dividing by (2,000 lbs/ton).

Compliance with the hourly and annual emissions limitation will be assumed provided that the TDS concentration recorded in d) remains below 3,075 mg/l.

\* Per the permit application and based on AWMA Abstract No. 216, Session AM-lb, Orlando, 2001 and Reisman and Frisbie Calculating Realistic PM<sub>10</sub> Emissions from Cooling Towers, PM<sub>10</sub> is 30% of PM at 5,000 ppmw.

\*\* Per the permit application and based on AWMA Abstract No. 216, Session AM-lb, Orlando, 2001 and Reisman and Frisbie Calculating Realistic PM<sub>10</sub> Emissions from Cooling Towers, PM<sub>2.5</sub> is 0.177% of PM at 5,000 ppmw

c. Emission Limitation:

The maximum drift rate shall not exceed 0.0005%.

Applicable Compliance Method:

Manufacturer's emissions data shall be used to demonstrate compliance with this limitation.

Within 90 days of startup, the permittee shall submit to Ohio EPA's Northeast District Office written documentation provided by the vendor/manufacturer, of the maximum drift rate of 0.0005% for the drift eliminator and the premise, basis, and justification for the drift rate.

d. Emission Limitation:

The permittee shall maintain the TDS concentration of the cooling water less than or equal to 5,000 milligrams per liter.

Applicable Compliance Method:

The monitoring and recordkeeping requirements under d)(1) and d)(2) shall serve as demonstration of compliance.



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

If required, compliance shall be demonstrated using test procedures that conform to regulation 40 CFR 136, "Test Procedures for the Analysis of Pollutants". Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

e. Emission Limitation:

Visible emissions shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

**15. P012, Wastewater Treatment Plant Cooling Water Tower**

**Operations, Property and/or Equipment Description:**

Wastewater Treatment Plant Cooling Water Tower

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) 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.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM <sub>2.5</sub> , or PM <sub>10</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rules 3745-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM <sub>10</sub> ) shall not exceed 0.0005 pound per hour (lb/hr) and 0.0021 ton per rolling, 12-month period.  The permittee shall install a drift eliminator with a maximum drift rate of 0.0005% on this emissions unit.  Visible particulate emissions shall not exceed 10% opacity as a 6-minute average. The presence of condensed water vapor shall not be deemed a violation for failure of stack emissions meeting this visible emission limitation.  See b)(2)e., b)(2)f., and c)(1)
d.	OAC rule 3745-17-07(A)(1)	See b)(2)d.
e.	OAC rule 3745-17-11(B)	See b)(2)d.

- (2) Additional Terms and Conditions
  - a. Compliance with the requirements of this rule for PM<sub>10</sub>/PM<sub>2.5</sub> emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
  - b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
  - d. The emission limitation specified by this rule is less stringent than the emission limitation established by OAC rule 3745-31-10 through 20.
  - e. The lb/hr emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for PE for this emissions unit was determined to be the following:
    - i. the use of drift eliminators with a maximum drift rate specification of 0.0005 percent or less.
  - f. Per the PTI application, PM<sub>2.5</sub> is 0% of PM at 50,000 ppmv based on Reisman and Frisbee Calculating PM<sub>10</sub> Emissions from Cooling Towers.
- c) Operational Restrictions
  - (1) The permittee shall maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 50,000 milligrams per liter (mg/l).
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall properly install, operate, and maintain a conductivity meter or other equipment to continuously monitor and record the TDS concentration of the cooling tower water. The monitoring devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.
  - (2) Since the TDS data measured by the conductivity meter or other equipment is based on a correlation between conductivity and TDS, an exceedance measured by the conductivity meter or equivalent is not a violation of the TDS operational restriction, but rather serves as an indicator to initiate corrective action by the permittee to reduce the TDS concentration.
- e) Reporting Requirements
  - (1) The permittee shall submit quarterly deviation (excursion) reports that identify all hourly TDS readings in excess of 50,000 mg/l. The reports shall identify corrective action taken to reduce the TDS concentration.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit

- (2) Prior to startup, the permittee shall submit written documentation provided by the vendor/manufacturer, of the maximum drift rate of 0.0005% for the drift eliminator and the premise, basis, and justification for the drift rate.
- (3) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

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. Emission Limitation:

PM<sub>10</sub> emissions shall not exceed 0.0005 lb/hr and 0.0021 ton per rolling, 12-month period.

Applicable Compliance Method:

The PM emissions are based on multiplying the maximum re-circulating water flow rate (1,000 gal/min) by the maximum TDS concentration (50,000 mg/l) multiplied by 3.785 l/gal multiplied by the decimal fraction drift rate per flow (0.0005/100) multiplied by 60 min/hr divided by 453,592 mg/lb.

\*The lb/hr PM<sub>10</sub> emissions limitation is 1.0 lb PM/hr multiplied by 30% (0.30). The annual emission limitation is based on multiplying the hourly emission limitation (0.0005 lb/hr) by the maximum annual hours of operation (8,760 hrs/yr) and dividing by (2,000 lbs/ton).

Compliance with the hourly and annual emissions limitation will be assumed provided that the TDS concentration recorded in d) remains below 3,075 mg/l.

b. Emission Limitation:

The maximum drift rate shall not exceed 0.0005%.

Applicable Compliance Method:

Manufacturer's emissions data shall be used to demonstrate compliance with this limitation.

Within 90 days of startup, the permittee shall submit to Ohio EPA's Northeast District Office written documentation provided by the vendor/manufacturer, of the maximum drift rate of 0.0005% for the drift eliminator and the premise, basis, and justification for the drift rate.

c. Emission Limitation:

The permittee shall maintain the TDS concentration of the cooling water less than or equal to 50,000 milligrams per liter.

Applicable Compliance Method:

The monitoring and recordkeeping requirements under d)(1) and d)(2) shall serve as demonstration of compliance.

If required, compliance shall be demonstrated using test procedures that conform to regulation 40 CFR 136, "Test Procedures for the Analysis of Pollutants". Alternative U.S. EPA approved test methods may be used with prior written approval from the Ohio EPA.

d. Emission Limitation:

Visible emissions shall not exceed 10% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be demonstrated through visible emissions observations performed in accordance with Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

**16. F004, Urea Process Equipment Leaks**

**Operations, Property and/or Equipment Description:**

Urea Plant Equipment Leaks

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(4) through d)(7).

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) and ORC 3704.03(T)	See b)(2)a. and the control measures and work practices outlined in paragraphs b)(2)b. through b)(2)f.
b.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	<p>Volatile organic compound (VOC) emissions shall not exceed 4.1 lbs/hr and 17.9 tons per rolling, 12-month period.</p> <p>See b)(2)g.</p>
c.	ORC 3704.03(F) and OAC rule 3745-114	See d)(4) through d)(6).

(2) Additional Terms and Conditions

a. Compliance with the requirements of this rule for VOC emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

b. For any transfer of ammonia or urea from the storage tanks to the loading rack and from the loading rack to the delivery vessel (tanker truck), the displaced vapors shall be collected by a vapor balance system. The vapor balance system shall be equipped with a vapor tight vapor line from the tanker truck to the unloading rack and a means to ensure that the vapor line is connected before urea is transferred. The vapor balance system shall be designed and operated to route at least 99 percent of displaced vapors from the loading process back to the tanker truck.

c. All urea loading lines, unloading lines and vapor lines shall be equipped with fittings which are vapor tight.

- d. All leaks in liquid lines and vapor lines shall be repaired within fifteen days after identification.
  - e. The delivery vessel hatches shall be closed at all times during the unloading of the delivery vessel.
  - f. There shall be no leaks in the delivery vessel pressure/vacuum relief valves and hatch covers.
  - g. The lb/hr emission limitations are based on a BACT Analysis that was conducted by Pallas Nitrogen LLC. Per the PTI application, BACT for VOC emissions for this emissions unit was determined to be the following:
    - i. Leak detection and repair (LDAR) and comply with work practice standards in 40 CFR 60.482-1a – 60.482-11a as applicable for all equipment in VOC service.
- c) Operational Restrictions
- (1) The vapor balance system shall be kept in good working order and shall be used at all times during the unloading of urea into the unloading rack.
- d) Monitoring and/or Recordkeeping Requirements
- (1) Leak Detection and Repair Program
    - a. The permittee shall develop and implement a leak detection and repair program designed to monitor and repair leaks from ancillary equipment and compressors covered by this permit. This leak detection and repair program shall include the following elements:
      - i. An initial and then annual inspection of the ancillary and associated equipment and compressors shall be conducted to determine if a leak exists. Leaks shall be determined through the use of an analyzer meeting U.S. EPA Method 21, 40 CFR Part 60, Appendix A.
      - ii. The analyzer shall be operated and maintained following the instrument manufacturer's operation and maintenance instructions.
      - iii. A leak shall be determined if the instrument reading is equal to or greater than 10,000 ppm total VOC and/or ammonia or the "leak detected" instrument reading required per any applicable rule.
      - iv. Documentation that includes the following:
        - (a) the date the inspection was conducted;
        - (b) the name of the employee conducting the leak check;
        - (c) the identification of any component that was determined to be leaking; and

- (d) the date the component was repaired and determined to no longer be leaking.
- b. The records associated with the leak detection and repair program shall be maintained for at least 5 years and shall be made available to the Director or his representative upon verbal or written request.
- (2) The permittee shall maintain a log of the downtime for the vapor balance system when this emissions unit is in operation.
- (3) While urea is being loaded, the permittee shall monitor the vapor balance system and ancillary equipment for leaks. The permittee shall maintain records of the results of any leak checks, including, at a minimum, the following information:
  - a. the date of inspection;
  - b. the leak detection method;
  - c. the findings of the inspection, which shall indicate the location, nature, and severity of each leak (or may indicate no leak found);
  - d. the corrective action(s) taken to repair each leak and the date of final repair;
  - e. the reasons for any repair interval exceeding 15 calendar days, from the time of detection to the date of final repair; and
  - f. the inspector's name and signature.

These records shall be retained and accessible for a period of 5 years.

- (4) The permit-to-install (PTI) application for this emissions unit, P902, was evaluated based on the actual materials and the design parameters of the emissions unit's(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., “8” hours per day and “5” 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: ammonia (NH<sub>3</sub>)

TLV (mg/m<sup>3</sup>): 25.0

Maximum Hourly Emission Rate (lbs/hr): 0.3

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 20.0

MAGLC (ug/m<sup>3</sup>): 414.6

The permittee, having demonstrated that emissions of NH<sub>3</sub> from emissions unit(s) P902, is estimated to be equal or greater than eighty per cent, but less than 100 per cent of the maximum acceptable ground level concentration (MAGLC), shall not operate the emissions unit(s) at a rate that would exceed the daily emissions rate, process weight rate, and/or restricted hours of operations, as allowed in this permit; and 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).

- (5) 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 PTI 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.

- (6) 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.

- (7) 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 quarterly deviation (excursion) reports that identify the following:
- a. Each day that urea is transferred via the loading rack and the vapor balance system was not in operation.
  - b. Any leaks in vapor or liquid lines that are not repaired within fifteen days after identification (in accordance with b)(2)c.).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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. Emission Limitation:

Control measures and work practices necessary to reduce and/or eliminate VOC and/or ammonia leaks from process equipment.

Applicable Compliance Method:

If required, compliance with the control measures and work practices shall be determined in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 21. Alternative EPA-approved test methods may be used with prior approval from the Ohio EPA.

g) Miscellaneous Requirements

- (1) None.

**17. P901, Granulated Urea Transfer Points with bin vents**

**Operations, Property and/or Equipment Description:**

Urea Dome and Granulated Urea Transfer with bin vents

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate emissions (PE) from the bin vents serving these emission units shall not exceed 0.005 grains per dry standard cubic foot (grains/dscf).
d.	OAC rule 3745-17-11	The emission limitation required by this applicable rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-10 through 20.
e.	OAC rule 3745-17-07(A)	Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
f.	OAC rule 3745-17-07(B)	See b)(2)f.
g.	OAC rule 3745-17-08	See b)(2)g.

(2) Additional Terms and Conditions

- a. Compliance with the requirements of this rule for PE emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The emissions from this emissions unit shall be vented bin vent filters at all times the emissions unit is in operation.
- e. All particulate emissions are assumed to be less than 2.5 microns in diameter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions limitations include both filterable and condensable particulate emissions.
- f. This emissions unit is exempt from the visible emissions limitations for fugitive dust, specified in OAC rule 3745-17-07(B), pursuant to OAC rule 3745-17-07(B)(11)(e), because the emissions unit is not located within areas identified in "Appendix A" of OAC rule 3745-17-08.
- g. This emissions unit is not located within areas identified in "Appendix A" of OAC rule 3745-17-08, therefore, the requirements of OAC rule 3745-17-08(B), which requires the installation of reasonably available control measures to prevent fugitive dust, do not apply to this emissions unit pursuant to OAC rule 3745-17-08(A)(1).

c) Operational Restrictions

- a. The emissions from these emissions units shall be vented to the bin vent filters at all times the emissions unit is in operation.
- b. The installation and use of hoods, fans, and/or other equipment to adequately enclose, contain, capture, vent, and control fugitive dust from these emissions units shall meet the following requirements:
  - i. the collection efficiency shall be sufficient to minimize or eliminate visible emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the bin vent filters when the controlled emissions unit(s) is in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the bin vent filters on daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in

accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable pressure drop shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range is established to demonstrate compliance.

Whenever the monitored value for the pressure drop deviates from the limit or range 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 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 pressure drop 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.

This range or limit on the pressure drop across the bin vent filters 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 to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition,

approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

- (2) The bin vent filters shall be equipped with alarms indicating when the pressure drop is outside of the manufacturer's recommended differential pressure range, thus prompting a filter change and/or repair of the controls.
- (3) 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 and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the location and color of the emissions;
  - b. 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 minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions 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.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. each period of time (start time and date, and end time and date) when the pressure drop across the bin vent filters was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
  - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the bin vent filters;

- 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, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

- (2) The permittee shall submit semiannual written reports that identify:
  - a. all days during which any visible particulate emissions were observed from the stack serving this emissions unit;
  - b. all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit; and
  - c. any corrective actions taken to minimize or eliminate the visible particulate emissions from the stack and/or visible emissions of fugitive dust.

These reports shall be submitted to the Director Ohio EPA’s Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

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. Emission Limitations

Particulate emissions (PE) from the bin vents serving these emission units shall not exceed 0.005 grains per dry standard cubic foot (grains/dscf).

Applicable Compliance Methods

If required, compliance shall be demonstrated in accordance with OAC 3745-17-03 (B)(10), U.S. EPA Method 5 of 40 CFR, Part 60, Appendix A.

- b. Emission Limitation:

Visible particulate emissions from the stack shall not exceed twenty percent opacity as a six-minute average, except as specified by rule.



**Draft Permit-to-Install**  
Pallas Nitrogen LLC  
**Permit Number:** P0118959  
**Facility ID:** 0215132002

**Effective Date:** To be entered upon final issuance

Applicable Compliance Method

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

- (1) None.

**18. Emissions Unit Group – T005, T006, and T007**

**Operations, Property and/or Equipment Description:**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
T005	3,982,773 gallon Ammonia Tank 1 with flare
T006	3,982,773 gallon Ammonia Tank 2 with flare
T007	3,982,773 gallon Ammonia Tank 3 with flare

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(6).

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.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the CO and NO <sub>x</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.04 pound per hour (lbs/hr), and 0.2 ton per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.02 pound per hour (lbs/hr), and 0.1 ton per rolling, 12-month period.  See c)(1) through c)(6).
d.	ORC 3704.03(F) and OAC rule 3745-114	See d)(6).
e.	40 CFR Part 60, Subpart Kb	See b)(2)d.

- (2) Additional Terms and Conditions
  - a. Compliance with the requirements of this rule for CO and NO<sub>x</sub> emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.
  - b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
  - d. 40 CFR Part 60, Subpart Kb does not apply to storage vessels with a capacity greater than 151 cubic meters (39,890 gallons) storing a liquid with a true maximum vapor pressure less than 3.5 kilopascals (0.508 psia), per Section 60.110b(b).
- c) Operational Restrictions
  - (1) This emissions unit shall be equipped with a flare to control NH<sub>3</sub> emissions. The flare shall be fired with natural gas and shall be operated with at least 98% control efficiency.
  - (2) The flare shall be designed and operated with no visible emissions, as determined by 40 CFR §60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
  - (3) The flare shall be operated with flame present at all times, as determined by the methods specified in by 40 CFR §60.18(f).
  - (4) The flare shall be used only when the net heating value of the gas being combusted is 200 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR §60.18(f).
  - (5) The flare shall be designed and operated with an exit velocity that satisfies the requirements of 40 CFR §60.18.
  - (6) The flare shall be operated at all times when emissions may be vented to it.
- d) Monitoring and/or Recordkeeping Requirements
  - (1) The permittee shall monitor the flare to ensure that it is operated when the emissions unit is in operation.
  - (2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
  - (3) The permittee shall record the following information each month:
    - a. all periods during which there was no pilot flame; and

- b. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment.
- (4) 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 flare serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
- a. the color of the emissions;
  - b. the total duration of any visible emission incident; and
  - c. any corrective actions taken to eliminate the visible emissions.
- (5) For each day during which the flare burns a fuel other than natural gas, the permittee shall maintain a record of the types and quantities of fuel burned in the emissions unit.
- (6) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual controlled emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install/operate (PTIO) 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 toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
- a. each day that the flare burned a fuel other than natural gas;
  - b. all periods during which there was no pilot flame;
  - c. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment;
  - d. all periods that there were emissions from this emissions unit but the flare was not in operation;
  - e. all periods that the flare operated in excess of 960 hours per rolling, 12-month period; and
  - f. all days during which any visible particulate emissions were observed from the flare serving this emissions unit and describe any corrective actions taken to eliminate the visible particulate emissions.

- (2) 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.

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 0.04 lb/hr, and 0.2 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated using: 'Tanks 4.0.9d', the latest version of Tanks computer software.

b. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 0.02 lb/hr, and 0.1 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated using: 'Tanks 4.0.9d', the latest version of Tanks computer software.

g) Miscellaneous Requirements

- (1) None.

**19. Emissions Unit Group – T010 and T011**

**Operations, Property and/or Equipment Description:**

<b>EU ID</b>	<b>Operations, Property and/or Equipment Description</b>
T010	277,021 gallon Ammonium Nitrate Solution Tank 1 with wet scrubber
T011	277,021 gallon Ammonium Nitrate Solution Tank 2 with wet scrubber

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) 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.

	<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.014 lb/hr, and 0.06 ton per rolling, 12-month period.  See b)(2)a. and b)(2)d.
d.	40 CFR Part 60, Subpart Kb	See b)(2)e.

(2) Additional Terms and Conditions

a. Compliance with the requirements of this rule for PM<sub>10</sub>/PM<sub>2.5</sub> emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
- d. The emissions from this emissions unit shall be vented to a wet scrubber at all times the emissions unit is in operation.
- e. 40 CFR Part 60, Subpart Kb does not apply to storage vessels with a capacity greater than 151 cubic meters (39,890 gallons) storing a liquid with a true maximum vapor pressure less than 3.5 kilopascals (0.508 psia), per Section 60.110b(b).

c) Operational Restrictions

- (1) None.

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.
- (2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge) and the scrubber liquid flow rate (in gallons per minute) during operation of this/these emissions unit(s), including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's flow rate on daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee. The acceptable range or limit for the pressure drop across the scrubber and the scrubber liquid flow rate shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) 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 control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) 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 the 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 pressure drop and flow rate 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.

These range(s) and/or limit(s) for the pressure drop and liquid flow rate 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 to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
  - a. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber and/or the liquid flow rate was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;
  - b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;
  - 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, that would bring the pressure drop and/or liquid flow rate into compliance with the acceptable range, was determined to be necessary and was not taken; 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 record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions 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:

Particulate matter emissions less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5) shall not exceed 0.01 lb/hr, and 0.06 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated using: 'Tanks 4.0.9d', the latest version of Tanks computer software.

g) **Miscellaneous Requirements**

- (1) None.

**20. T018, Ammonia Day Tank**

**Operations, Property and/or Equipment Description:**

295,194 gallon Ammonia Day Tank with flare

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) d)(6).

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) June 30, 2008	See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the CO and NO <sub>x</sub> emissions from this air contaminant source since the potential to emit is less than 10 tons per year.  See b)(2)c.
c.	OAC rule 3745-31-10 through 20 (Prevention of Significant Deterioration of Air Quality)	Carbon monoxide (CO) emissions shall not exceed 0.04 pound per hour (lbs/hr), and 0.2 ton per rolling, 12-month period.  Nitrogen Oxides (NO <sub>x</sub> ) emissions shall not exceed 0.02 pound per hour (lbs/hr), and 0.1 ton per rolling, 12-month period.  See c)(1) through c)(6).
d.	ORC 3704.03(F) and OAC rule 3745-114	See d)(6).
e.	40 CFR Part 60, Subpart Kb	See b)(2)d.

(2) Additional Terms and Conditions

a. Compliance with the requirements of this rule for CO and NO<sub>x</sub> emissions includes compliance with the requirements of OAC rule 3745-31-10 through 20.

- b. The BAT emission limits apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).
  - c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than ten tons per year BAT exemption) as part of the Ohio SIP.
  - d. 40 CFR Part 60, Subpart Kb does not apply to storage vessels with a capacity greater than 151 cubic meters (39,890 gallons) storing a liquid with a true maximum vapor pressure less than 3.5 kilopascals (0.508 psia), per Section 60.110b(b).
- c) Operational Restrictions
- (1) This emissions unit shall be equipped with a flare to control NH<sub>3</sub> emissions. The flare shall be fired with natural gas and shall be operated with at least 98% control efficiency.
  - (2) The flare shall be designed and operated with no visible emissions, as determined by 40 CFR §60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
  - (3) The flare shall be operated with flame present at all times, as determined by the methods specified in by 40 CFR §60.18(f).
  - (4) The flare shall be used only when the net heating value of the gas being combusted is 200 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR §60.18(f).
  - (5) The flare shall be designed and operated with an exit velocity that satisfies the requirements of 40 CFR §60.18.
  - (6) The flare shall be operated at all times when emissions may be vented to it.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall monitor the flare to ensure that it is operated when the emissions unit is in operation.
  - (2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
  - (3) The permittee shall record the following information each month:
    - a. all periods during which there was no pilot flame; and
    - b. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment.
  - (4) 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 flare

serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

- a. the color of the emissions;
  - b. the total duration of any visible emission incident; and
  - c. any corrective actions taken to eliminate the visible emissions.
- (5) For each day during which the flare burns a fuel other than natural gas, the permittee shall maintain a record of the types and quantities of fuel burned in the emissions unit.
- (6) Modeling to demonstrate compliance with, the "Toxic Air Contaminant Statute", ORC 3704.03(F)(4)(b), was not necessary because the emissions unit's maximum annual controlled emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit-to-install/operate (PTIO) 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 toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new PTIO.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:
- a. each day that the flare burned a fuel other than natural gas;
  - b. all periods during which there was no pilot flame;
  - c. the operating times for the flare, reason for flare operation (i.e., startup, shutdown, and/or emergency/malfunction) and the monitoring equipment;
  - d. all periods that there were emissions from this emissions unit but the flare was not in operation;
  - e. all periods that the flare operated in excess of 960 hours per rolling, 12-month period; and
  - f. all days during which any visible particulate emissions were observed from the flare serving this emissions unit and describe any corrective actions taken to eliminate the visible particulate emissions.
- (2) 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.

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 0.04 lb/hr, and 0.2 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated using: 'Tanks 4.0.9d', the latest version of Tanks computer software.

b. Emissions Limitation:

NO<sub>x</sub> emissions shall not exceed 0.02 lb/hr, and 0.1 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated using: 'Tanks 4.0.9d', the latest version of Tanks computer software.

g) Miscellaneous Requirements

(1) None.