Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

Certified Mail

6/19/2012

Mr. Michael Bishop
POET Biorefining - Fostoria
2111 Sandusky Street
Fostoria, OH 44830

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

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 0374010235
Permit Number: P0109395
Permit Type: Administrative Modification
County: Seneca

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to “Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General’s Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

If you have any questions, please contact Ohio EPA DAPC, Northwest District Office at (419)352-8461or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. This permit can be accessed electronically on the DAPCWeb page,www.epa.ohio.gov/dapc, by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA-NWDO

Ohio | Environmental Protection Agency

# FINAL

# Division of Air Pollution Control
# Permit-to-Install and Operate
for
POET Biorefining - Fostoria

| | |
|---|---|
| Facility ID: | 0374010235 |
| Permit Number: | P0109395 |
| Permit Type: | Administrative Modification |
| Issued: | 6/19/2012 |
| Effective: | 6/19/2012 |
| Expiration: | 6/26/2014 |

Ohio Environmental Protection Agency

**Division of Air Pollution Control**
**Permit-to-Install and Operate**
for
POET Biorefining - Fostoria

**Table of Contents**


Authorization ..... 1

A. Standard Terms and Conditions ..... 3

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

B. Facility-Wide Terms and Conditions ..... 8

C. Emissions Unit Terms and Conditions ..... 10

1. P007, EU011 - EU024 ..... 11

# Authorization

Facility ID: 0374010235
Application Number(s): A0043567
Permit Number: P0109395
Permit Description: Administrative modification to the ethanol production operations (P007) to: add additional hours of expected schduled maintenance scrubber by-pass hours, reduce the number of RTO bypass hours, lower scrubber VOC emission rate and to lower RTO VOC emission rates.
Permit Type: Administrative Modification
Permit Fee: $100.00
Issue Date: 6/19/2012
Effective Date: 6/19/2012
Expiration Date: 6/26/2014
Permit Evaluation Report (PER) Annual Date: Oct 1 - Sept 30, Due Nov 15

This document constitutes issuance to:

POET Biorefining - Fostoria
2111 Sandusky Street
Fostoria, OH 44830

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

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402
(419)352-8461

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director

# Authorization (continued)

Permit Number: P0109395
Permit Description: Administrative modification to the ethanol production operations (P007) to: add additional hours of expected schduled maintenance scrubber by-pass hours, reduce the number of RTO bypass hours, lower scrubber VOC emission rate and to lower RTO VOC emission rates.

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

| | |
|---|---|
| **Emissions Unit ID:** | **P007** |
| Company Equipment ID: | EU011 - EU024 |
| Superseded Permit Number: | P0107584 |
| General Permit Category and Type: | Not Applicable |

# A. Standard Terms and Conditions

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

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

**2. Who is responsible for complying with this permit?**

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

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

**3. What records must I keep under this permit?**

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

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

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

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

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

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

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

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

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

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

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

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

**7. What reports must I submit under this permit?**

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

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

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

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

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

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

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

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

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

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

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

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

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting[1] a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

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

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

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

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

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

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

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

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

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

# B. Facility-Wide Terms and Conditions

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

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

      (1) None.

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

      (1) None.

# C. Emissions Unit Terms and Conditions

**1. P007, EU011 - EU024**

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

ethanol production operations

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

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

a. b)(1)h., d)(8) through d)(11) and e)(2)

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

a. b)(1)a., b)(2)a., c)(1), d)(1), d)(2), d(3) and e)(4)

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(D) | **<u>Emission limits during normal operation:</u>**<br><br>Carbon monoxide (CO) emissions from P007, P008, P009 and P010 combined, shall not exceed 12.02 lbs/hr and 52.66 TPY [see b)(2)a and c)(1)].<br><br>Particulate matter equal to or less than 10 microns in size (PM10), from emissions units P007, P008, P009 and P010 combined, shall not exceed 10.0 lbs/hr and 43.8 TPY [see b)(2)a., b)(2)c. and c)(1)]<br><br>Volatile organic compound (VOC) emissions from P007, P008, P009 and P010 combined, shall not exceed 9.0 lbs/hr and 46.12 TPY. [see b)(2)a and |

| | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| | | c)(1)]<br><br>**<u>Emission limits during downtime of the RTO</u>**<br><br>During downtime of the RTO, emissions unit P007 shall be the only emissions unit exhausted to the fermentation scrubber.<br><br>VOC emissions shall not exceed 27.0 lbs/hr and 7.69 TPY [see b)(2)a., b)(2)d. and c)(1)].<br><br>Visible particulate emissions (PE) from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average during normal and RTO downtime operations.<br><br>**<u>Emission limits during downtime of the scrubber</u>**<br><br>VOC emissions shall not exceed 600.00 lbs/hr and 12.0 TPY [See b)(2)a., b)(2)h., b)(2)i., c)(1) and e)(6).<br><br>Visible particulate emissions (PE) from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six minute average during normal and Scrubber downtime bypass operations. |
| b. | ORC rule 3704.03(T) | Nitrogen oxides (NOx) emissions from emissions units P007, P008, P009 and P010 combined shall not exceed 11.0 pounds per hour (lbs/hr).<br><br>See b)(2)e. |
| c. | OAC rule 3745-31-05(A)(3), as effective 11/30/01 | See b)(2)f. |
| d. | OAC rule 21-09(DD) | See the requirements for emissions unit P801. |
| e. | 40 CFR Part 60, Subpart VV | See the requirements for emissions unit P801. |

| | | |
|---|---|---|
| f. | OAC rule 3745-17-07(A) | See b)(2)g. |
| g. | OAC rule 3745-17-11(B) | See b)(2)g. |
| h. | OAC rule 3745-114-01<br>ORC 3704.03(F) | See d)(8) through d)(11) and e)(2). |

(2) Additional Terms and Conditions

a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting the potential to emit (PTE) for CO, $PM_{10}$ and VOC to avoid Prevention of Significant Deterioration (PSD) and Title V applicability. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require control equipment and process control:

i. 12.02 lbs/hr and 52.66 tpy CO (for P007, P008, P009 and P010 combined);

ii. 10.0 lbs/hr PM10 and 43.8 tpy PM10(for P007, P008, P009 and P010 combined);

iii. visible PE shall not exceed 5% opacity, as a six-minute average (during normal operations and downtime of the RTO);

iv. 9.0 lbs/hr and 46.12 tpy VOC (during normal operations) (for P007, P008, P009 and P010 combined); and

v. 27.0 lbs/hr and 7.69 tpy VOC (during downtime of the RTO)

vi. 600.00 lbs/hr and 12.0 tpy VOC (during downtime of the scrubber)

b. The annual allowable emission rate is based on the annual production of 79,000,000 gallons denatured ethanol (includes up to 10,000,000 gallons of E85). Since the facility's annual production rate is equivalent to the maximum facility capacity, no operational restrictions, monitoring, record keeping or reporting requirements are necessary to ensure that this emissions unit does not exceed its annual allowable emission rates. The requirement to record the amount of ethanol produced is in the terms and conditions of emissions unit J001.

c. All emissions of particulate matter are PM10.

d. When the RTO is shutdown for unscheduled maintenance* or other operational reasons, while this emissions unit is in operation, this emissions unit shall be controlled by the fermentation scrubber. Down time of the RTO, while this emissions unit continues to operate, shall not exceed 400 hours per year and the permittee must also shut down emissions units P008 and P009 during the unscheduled downtime of the RTO.

*RTO shutdown for unscheduled maintenance is considered any maintenance, malfunction, etc. which the permittee does not address under the provisions of OAC rule 3745-15-06.

e. The Best Available Technology (BAT) requirements under ORC 3704.03(T) have been determined to be a NOx emission limitation not to exceed 11.0 lbs/hr (for P007, P008, P009 and P010 combined) and compliance with the lb/hr limitations established under OAC rule 3745-31-05(D).

The emission rates above represent the potential to emit (defined as the maximum capacity to emit an air pollutant under the physical and operational design). Therefore, no monitoring, record keeping, or reporting requirements are necessary to ensure compliance with these emission limitations.

f. The emissions of sulfur dioxide (SO2) from this emissions unit have been determined to be negligible and are therefore emission limitations under OAC rule 3745-31-05(A)(3), as effective 11-30-01, have not been established in this permit.

g. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).

h. When the scrubber is shutdown for unscheduled maintenance* or other operational reasons, while this emissions unit is in operation, the permittee shall be required to shutdown, at a minimum, the slurry and distillation operations of this emissions unit. Down time of the scrubber, while this emissions unit continues to operate, shall not exceed 40 hours per year. The permittee shall schedule and perform the activities to correspond to other shut down maintenance activities.

*Scrubber shutdown for unscheduled maintenance is considered any maintenance, malfunction, etc. which the permittee does not address under the provisions of OAC rule 3745-15-06.

i. During Ohio's ozone season, April 1 through October 31, the permittee shall conduct any unscheduled scrubber maintenance activities, as specified below:

i. perform maintenance activities between the hours of 7:00 p.m. and 7:00 a.m.; or

ii. perform maintenance activities on days during which the ozone air quality index (AQI) forecast is below 100 for the area surrounding the facility.

If it is not feasible to conduct the unscheduled scrubber maintenance activities in accordance with the requirements in b)(2)i.i. or b)(2)i.ii., the permittee shall notify Northwest District Office at least 2 weeks prior to performing the maintenance activities and indicate why it is impossible or impractical to meet those requirements.

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [see b)(2)a.]:

a. the use of a wet scrubber meeting a minimum control efficiency of 95% for VOC emissions;

b. the use of a regenerative thermal oxidizer (RTO) following the wet scrubber meeting a minimum control efficiency of 90% for CO and particulate matter* and 98% for VOC emissions; and

c. firing only natural gas in the RTO.

d. *The control of particulate matter includes a multiclone/cyclone for removal of particulate matter (as dried product) prior to entering the RTO. The control system shall result in a PM10 emission rate not to exceed 10.0 lbs/hr from the RTO.

(2) The unscheduled down time of the RTO, while this emissions unit continues to operate, shall not exceed 400 hours per calendar year.

(3) The permittee shall shut down emissions units P008 and P009 when the RTOexperiences an unscheduled shutdown.

(4) The permittee shall shutdown, at a minimum, the slurry and distillation operations of this emissions unit when the scrubber experiences an unscheduled shutdown.

(5) The unscheduled down time of the scrubber, while this emissions unit continues to operate shall not exceed 40 hours per calendar year.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall properly install, operate, and maintain equipment to continuously monitor and record the combustion temperature within the thermal oxidizer during operation of this emissions unit. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the combustion temperature within the thermal oxidizer on a continuous basis.

Whenever the monitored value for the combustion temperature deviates from the value specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and 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 value specified below, 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: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the combustion temperature within the thermal oxidizer immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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

This value 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.

(2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber, in inches of water, and the scrubber water flow rate, in gallons per minute during operation of this emissions unit. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop, in inches of water, across the scrubber and the scrubber water flow rate, in gallons per minute, on a once per shift basis.

Whenever the monitored values for the pressure drop and/or the monitor value for the water flow rate deviate from the values specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and 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 value specified below, 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: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop and/or water flow rate reading immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The pressure drop across the scrubber shall be maintained in accordance with the manufacturer's specifications. The scrubber water flow rate shall be no less the value

established during the most recent emission testing that demonstrated the emissions unit was in compliance (until such time that such value is established, the scrubber water flow rate shall be maintained in accordance with the manufacturer's specifications).

(3) The water flow rate 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 water flow rate based upon information obtained during future emission tests that demonstrate compliance with the allowable emission rates for this emissions unit. In addition, approved revisions to the water flow rate value will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into the operating permit for the facility by means of a permit modification.

(4) For each time period during which emissions units P008 and/or P009 were in operation when the RTOwas shut down [see b)(2)d. and c)(2)], the permittee shall maintain a record of the number of hours emissions unit P008 and/or P009 were in operation during that time period. Also, the permittee shall maintain a record of all instances when emissions unit P008 and/or P009 were in operation when the RTO was shut down.

(5) For each time period during which the slurry and distillation processes were in operation when the scrubberwas shut down [see b)(2)h. and c)(5)], the permittee shall maintain a record of the number of hours the slurry and distillation processes were in operation during that time period. Also, the permittee shall maintain a record of all instances when the slurry and distillation processes were in operation when the scrubber was shut down.

(6) The permittee shall maintain monthly records of the number of hours the RTOwas shut down while this emissions unit remained in operation [see b)(2)d. and c)(2)] (in hours per month and total hours, to date for the calendar year).

(7) The permittee shall maintain monthly records of the number of hours the scrubber was shut down while the slurry and distillation processes remained in operation [see b)(2)h. and c)(4)] (in hours per month and total hours, to date for the calendar year).

(8) The federally enforceable permit-to-install and operate (FEPTIO) application for these emissions unit(s), B001, B002, J001, P007, P008, P009, P010 and P012, 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 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., "**X**" hours per day and "**Y**" 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**: Acetaldehyde
TLV (mg/m3): 33.2
Maximum Hourly Emission Rate (lbs/hr): 5.75 (permit total)
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 108.8
MAGLC (ug/m3): 790

**Toxic Contaminant**: Hexane
TLV (mg/m3): 176.23
Maximum Hourly Emission Rate (lbs/hr): 0.70 (permit total)
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2.77
MAGLC (ug/m3): 4,196

**Toxic Contaminant**: Formaldehyde
TLV (mg/m3): 368
Maximum Hourly Emission Rate (lbs/hr): 0.52 (permit total)
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 1.48
MAGLC (ug/m3): 6.47

The permittee, has demonstrated that emissions of acetaldehyde, hexane and formaldehyde, from emissions unit(s) B001, B002, J001, P007, P008, P009, P010 and P012, 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).

(9) 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 FEPTIO 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.

(10) 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.

(11) 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) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

(2) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the annual Permit Evaluation Report (PER). If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

(3) The permittee shall submit deviation reports that identify all instances when:

a. emissions units P008 and/or P009 were in operation [see b)(2)d. and c)(3)] when the RTOwas shut down; and

b. slurry and distillation processes were in operation [see b)(2)h. and c)(4)].

These reports shall be submitted within 30 days after the deviation occurs.

(4) The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:

a. For the thermal incinerator:

i. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was

in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent performance test that demonstrated the emissions unit was in compliance.

ii. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;

iii. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the combustion temperature into compliance with the acceptable range, was determined to be necessary and was not taken;

iv. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action; and

v. anyexceedance of the annual hours of operation when the emissions units was operating during unscheduled downtime of the RTO.

b. For the scrubber:

i. each period of time when the pressure drop across the scrubber was outside of the acceptable range;

ii. each period of time when the scrubber water flow rate deviated from the acceptable value;

iii. an identification of each incident of deviation described in (a) and/or (b) where prompt corrective action, that would bring the pressure drop and/or water flow rate into compliance with the acceptable range/value, was determined to be necessary and was not taken;

iv. an identification of each incident of deviation described in (a) and/or (b) where proper records were not maintained for the investigation and/or the corrective action; and

v. anyexceedance of the annual hours of operation when the emissions units was operating during unscheduled downtime of the scrubber.

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Director (the appropriate District Office or local air agency).

(5) 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) 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 180 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than one year after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the NOx, CO, VOC, and PM10 mass emission limitations from the regenerative thermal oxidizer controlling this emissions unit. Emission testing shall also be conducted to demonstrate compliance with the control efficiency limitation for VOCs from the scrubber controlling this emissions unit, and for the control efficiency limitation for VOCs from the regenerative thermal oxidizer controlling this emissions unit. Emission testing shall also be conducted to verify the expected emissions for single and combined HAPs.

c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:

i. for PM10, Methods 201/201A and 202 of 40 CFR Part 51, Appendix M;

ii. for NOx, Methods 1-4 and 7 of 40 CFR Part 60, Appendix A;

iii. for CO, Methods 1-4 and 10 of 40 CFR Part 60, Appendix A; and

iv. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions; and

v. for HAPs (acetaldehyde, hexane, formaldehyde, acrolein, toluene, xylenes), Methods 18 or 320 from 40 CFR Part 60, Appendix A.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

d. The <u>control efficiency</u> (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .

e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."

f. The test(s) shall be conducted while emissions units P007, P008, P009 and P010 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.

g. During emission testing, the permittee shall also record the following information:

i. the pressure drop across the scrubber, in inches of water;

ii. the scrubber water flow rate, in gallons/minute; and

iii. the average combustion temperature within the thermal incinerator, in degrees Fahrenheit.

h. 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, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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

A comprehensive written report of 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, NWDO 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, NWDO.

Future testing requirements shall be conducted in accordance with applicable rules, policies, etc. (i.e. Engineering Guide #16, OAC rule 3745-15-04, etc.) Testing time frames may be amended or waived for cause upon prior request of and written approval of, the Ohio EPA Northwest District Office.

(2) Compliance with the emission limitations in Section b)(1)of these terms and conditions shall be determined in accordance with the following methods:

a. <u>Emission Limitations:</u>
9.0 lb VOC/hr, 46.12 tpy VOC (for emissions units P007, P008, P009 and P010 combined)

11.0 lbsNOx/hr (for emissions units P007, P008, P009 and P010 combined)

12.02 lbs CO/hr, 52.66 tpy CO (for emissions units P007, P008, P009 and P010 combined)

10.0 lbs PM10/hr, 43.8 tpy PM10 (for emissions units P007, P008, P009 and P010 combined)

Applicable Compliance Method:
Compliance with the hourly allowable emission limitations above shall be demonstrated based on the results of emission testing conducted in accordance with the following:

i. for PM10, Methods 201201A and 202 of 40 CFR Part 51, Appendix M;

ii. for NOx, Methods 1-4 and 7 of 40 CFR Part 60, Appendix A;

iii. for CO, Methods 1-4 and 10 of 40 CFR Part 60, Appendix A; and

iv. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

The annual emission limitations were developed by multiplying the respective hourly emission limitations by the maximum operating schedule of 8760 hours/year, and then dividing by 2000 lbs/ton. Therefore, if compliance is shown with the hourly limitations, compliance with the annual limitations shall also be demonstrated.

b. Emission Limitation:
Visible PE from the RTO stack shall not exceed 5% opacity, as a six-minute average (during normal operations and RTO downtime).

Appliance Compliance Method:
If required compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

c. Emission Limitation:
The scrubber shall meet a minimum control efficiency of 95% for VOC emissions.

The regenerative thermal oxidizer shall meet a minimum control efficiency of 98% for VOC emissions, and a minimum control efficiency of 90% for CO and PM10*.

*The control of particulate matter includes a multiclone/cyclone for removal of particulate matter (as dried product) prior to entering the RTO. The control system shall result in a PM10 emission rate not to exceed 10.0 lbs/hr from the RTO.

Applicable Compliance Method:
Compliance with the control efficiency requirements above shall be demonstrated based on the results of emission testing conducted in accordance with the methods outlined in Section f)(1) of this permit. Compliance with the CO destruction efficiency shall be assumed as long as compliance with the hourly CO mass emission limitation is maintained. [Due to the creation of CO in the RTO, it is not possible to perform testing to demonstrate compliance directly associated with the destruction of CO entering the RTO.]

g) Miscellaneous Requirements

(1) None.