

Facility ID: 1431070914 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

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Facility ID: 1431070914 Emissions Unit ID: P040 Issuance type: Final State Permit To Operate

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**Part II - Special Terms and Conditions**

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

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
  - (a) None.

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

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P040 - Pre-Weigh Area	OAC rule 3745-31-05(C) (PTI 14-05889)	Particulate emissions* (PE) and particulate matter emissions ten microns and less in diameter (PM10) from the Pre-Weigh Area shall not exceed 0.14 pound per hour and 0.6 ton per year.  * PE = PM10
	OAC rule 3745-17-07(A)(1)	See term and condition A.2.a. Visible particulate emissions from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(C).

2. **Additional Terms and Conditions**
  - (a) Permit to Install 14-05889 for this air contaminant source takes into account the use of a scrubber with a minimum control efficiency of 90 percent by weight for particulate emissions as a voluntary restriction as proposed by the permittee for the purposes of avoiding Best Available Technology requirements under OAC rule 3745-31-05(A)(3).

**B. Operational Restrictions**

1. None

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

1. The scrubber water flow rate shall be continuously maintained at a value of not less than 250 gallons per minute at all times while the emissions unit is in operation.
2. The permittee shall properly operate, and maintain equipment to continuously monitor the water flow rate of the scrubber while the emissions unit is in operation. The monitoring device shall be calibrated, operated, and maintained in accordance with the manufacturers' recommendations, instructions, and operating manuals.  
  
The permittee shall record the following information each day:
  - a. The scrubber water flow rate, in gallons per minute, once each day.
  - b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

**D. Reporting Requirements**

1. The permittee shall submit deviation reports to the Hamilton County Department of Environmental Services that identify the following occurrences:
  - a. The permittee shall identify all periods of time during which the scrubber water flow rate did not comply with

the levels specified in this permit; and

- b. The permittee shall identify all periods of time during which the capture (collection) system, control device, and monitoring equipment were inoperable, when the associated emissions unit was in operation.
- 2. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

**E. Testing Requirements**

- 1. Compliance with the emission limitation in Section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:  
Particulate emissions\* (PE) from the Pre-Weigh Area shall not exceed 0.14 pounds per hour and 0.60 ton per year.

\* PE = PM10

Applicable Compliance Method:  
Compliance with the hourly emission limitation shall be determined by the following equation: (emission factor of 0.01 gr PE/dscf) X (volumetric flow rate of 1,600 dscf/min) X (1 lb/7000 gr) X (60 min/hr). Annual emissions shall be determined by multiplying the hourly emissions by 8760 hours per year and dividing by 2000 lbs/ton. The emissions factors were derived from a Method 5 test on a similar source in April 2005. If required, compliance with the control requirement shall be demonstrated through an emissions test using 40 CFR Part 60 Appendix A, Methods 1 - 5.

b. Emission Limitation:  
Visible particulate emissions from any stack shall not exceed 20 percent opacity as a six-minute average, except as specified by rule.

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

**F. Miscellaneous Requirements**

- 1. Since this emissions unit is vented to a common control system and stack that is shared by other emissions units at the facility, the allowable emissions rate during performance tests will be determined by adding together the hourly emissions rates for all emissions units sharing the common control system and stack.
- 2. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic pollutant will be less than 1.0 ton. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that a new permit to install application would be required for an emissions unit if changes in the composition of the materials or use of new materials would cause the emissions of any pollutant that has a listed Threshold Limit Value (TLV), as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices"), to increase to above 1.0 ton per year.

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**Part II - Special Terms and Conditions**

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

- 1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (a) None.
- 2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
  - (a) None.

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

- 1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P041 - Pilot Plant Process	OAC rule 3745-31-05(C) (PTI 14-05929)	Organic Compound (OC) emissions from the pilot plant operations shall not exceed 0.45 pound per hour

and 1.97 tons per year.

Particulate emissions (PE) and particulate matter emissions ten microns and less in diameter (PM10) from the pilot plant operations shall not exceed 2.72 tons per year.

See term and condition A.2.a.

OAC rule 3745-17-07(A)

Visible particulate emissions shall not exceed 20 percent opacity, as a six minute average, except as specified by rule.

OAC rule 3745-17-11(B)

Particulate emissions (PE) from the pilot plant operations shall not exceed 0.877 pound per hour.

**2. Additional Terms and Conditions**

(a) Permit-to-Install number 14-05929 for this air contaminant source takes into account the following voluntary restrictions (including the use of any control equipment) as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) under OAC rule 3745-31-05(A)(3):

i. the permittee shall control particulate emissions from equipment (other than equipment that meets the de minimis air contaminant source exemption per OAC rule 3745-15-05) with the use a panel filter with at least a 80% control efficiency and either a wet venturi scrubber with at least a 85% control efficiency or a packed bed scrubber with at least a 90% control efficiency; and

ii. the permittee shall control organic compound emissions with the use of a regenerative thermal oxidizer with at least a 97% control efficiency.

**B. Operational Restrictions**

1. None

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

1. The permittee shall properly operate, and maintain equipment to continuously monitor the wet venturi and packed bed scrubber water flow rates during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the water flow rate on daily basis.

Whenever the monitored value for the water flow rate falls below the value specified below when the emissions unit is in operation, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: 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 water flow rate 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.

None

The minimum scrubber water flow rate for the wet packed bed scrubber shall be maintained at or above 2.25 gallons per minute at all times when the emissions unit is in operation.

The minimum scrubber water flow rate for the wet venturi scrubber shall be maintained at or above 2.25 gallons per minute at all times when the emissions unit is in operation.

These values 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 these values based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the value will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

2. The permittee shall operate, and maintain a continuous temperature monitor and recorder which measures and records the average combustion temperature within the thermal incinerator when the emissions unit is in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within + 1 percent of the temperature being measured or + 5 degrees Fahrenheit, whichever is greater. The permittee shall record the average combustion temperature for each three-hour time block when the emissions unit is in operation on a daily basis.

Whenever the monitored value for the average combustion temperature falls below the value specified below for any continuous three-hour block of time when the emissions unit is in operation, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: 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 thermal incinerator temperature 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 fall below 1450 degrees Fahrenheit.

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. The permittee may request revisions to the average combustion temperature based upon information obtained during future organic compound emission tests that demonstrate compliance with the allowable organic compound emission rate for this emissions unit. In addition, approved revisions to the average combustion temperature will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

3. The permittee shall operate and maintain a log of the equipment (other than equipment that meets the de minimis air contaminant source exemption per OAC rule 3745-15-05) that is installed and operating within the pilot plant. For each piece of equipment listed in the log, the permittee shall record the following information:
  - a. the date the equipment first became operational and the date the equipment was taken out of service;
  - b. the manufacturer, make and model number of the equipment; and
  - c. the control device(s) through which exhaust from the equipment is routed;
  - d. a calculation of the hourly controlled emissions rate of particulate matter and organic compound emissions from the equipment. This calculation shall be the uncontrolled emissions rate of the equipment (based upon information from the manufacturer, AP-42 or another source of reliable information as deemed appropriate by the Administrator) multiplied by one minus the control efficiency of the control device(s) to which the equipment is exhausted. The control efficiency for each control device shall be based upon the efficiencies set forth in term and condition A.2.a.

These records shall be maintained at the facility for three years after the equipment is taken out of service.

#### D. Reporting Requirements

1. The permittee shall submit quarterly deviation reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the scrubber water flow rate(s) was (were) outside of the acceptable range;
  - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
  - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the scrubber water flow rate(s) into compliance with the acceptable range(s), was (were) determined to be necessary and was (were) not taken; and
  - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

2. The permittee shall submit quarterly deviation reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator was less than 1450 degrees Fahrenheit ;
  - b. an identification of each incident of deviation described in (a) where prompt investigation was not conducted;
  - c. an identification of incident of deviation described in (a) where prompt corrective action, that would bring the average combustion temperature within the thermal incinerator into compliance with the acceptable range, was determined to be necessary and was not taken; and
  - d. an identification of incident of deviation described in (a) where proper records were not maintained for the investigation and/or corrective action.

These quarterly reports shall be submitted by April 30, July 31, October 31, and January 31, and shall cover the records for the previous calendar quarters.

3. The permittee shall submit annual reports which identify all equipment (other than equipment that meets the de minimis air contaminant source exemption per OAC rule 3745-15-05) located at the pilot plant and the annual OC and PE emissions from such sources.

#### E. Testing Requirements

1. Compliance with the emission limitations specified in Section A.I of the terms and conditions of this permit shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
Particulate Emissions (PE) shall not exceed 0.877 lb/hr.

Applicable Compliance Method:

The hourly PE limitation is based on Table I in OAC rule 3745-17-11(B). This emission limitation exceeds the emissions unit's controlled potential to emit. Compliance with the emission limitation outlined in this permit shall be demonstrated by the emission factors, control efficiencies (if applicable) and the operational parameters as submitted in the PTI application 14-05929 submitted March 9, 2007. All PE is assumed to be PM10. If required, the permittee shall demonstrate compliance by testing in accordance with Methods 1-4 and 5 of 40 CFR, Part 60, Appendix A for particulate emissions (PE) and Method 201 and/or 201A of 40 CFR, Part 51, Appendix M for particulate emissions 10 microns and less in diameter (PM10).

b. Emission Limitation:

Particulate emissions (PE) and particulate matter emissions 10 microns and less in diameter (PM10) shall not exceed 2.72 TPY.

Applicable Compliance Method:

The emission limitations are equal to the emissions unit's potential to emit. The potential to emit was calculated by:  $\{(0.62 \text{ lbs/hr}) \times (8760 \text{ hours/year})\} / (2000 \text{ lbs/ton})$  as provided in Permit to Install 14-05929 received on March 9, 2007. All PE is assumed to be PM10.

c. Emission Limitation:

Organic compound (OC) emissions shall not exceed 0.45 lb/hr.

Applicable Compliance Method:

Compliance with the hourly OC emission limitation shall be determined by summing the controlled emission rates calculated pursuant to term and condition C.3.d for all equipment installed in the pilot plant and included in the log required by section C.3.

d. Emission Limitation:

Organic compound (OC) emissions shall not exceed 1.97 TPY.

Applicable Compliance Method:

Compliance with the annual OC emission limitation shall be determined by multiplying the rates of controlled emissions from each piece of equipment by the number of days that the equipment was in operation and by 24 hours per day.

e. Emission Limitation:

Visible particulate emissions shall not exceed 20% opacity, as a six-minute average, except as specified by rule.

Applicable Compliance Method:

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

F. **Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic pollutant will be less than 1.0 ton. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that a new permit to install application would be required for an emissions unit if changes in the composition of the materials or use of new materials would cause the emissions of any pollutant that has a listed Threshold Limit Value (TLV), as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices"), to increase to above 1.0 ton per year.