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

10/31/2013

Certified Mail

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

Richard Jones
Firestone Polymers
BOX 26611
AKRON, OH 44319

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 1677010000
Permit Number: P0115674
Permit Type: Administrative Modification
County: Summit

Dear Permit Holder:

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

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

How to appeal this permit

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

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

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

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

How to get an electronic copy of your permit

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

If you have any questions, please contact Akron Regional Air Quality Management District at (330)375-2480 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,

Michael W. Ahern

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

Cc: ARAQMD

FINAL

Division of Air Pollution Control
Permit-to-Install and Operate
for
Firestone Polymers

Facility ID:	1677010000
Permit Number:	P0115674
Permit Type:	Administrative Modification
Issued:	10/31/2013
Effective:	10/31/2013
Expiration:	1/7/2018

Division of Air Pollution Control
Permit-to-Install and Operate
for
Firestone Polymers

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Authorization

Facility ID:	1677010000
Application Number(s):	M0002445
Permit Number:	P0115674
Permit Description:	Agency-initiated administrative modification to correct the monitoring and record keeping requirements for the flare and the reporting requirements for the flare and the thermal oxidizer. (This permit consists of the Synthetic Rubber Pilot Plant (P005), the Fabricated Batch Crumb Desolventizing System (P016) and the Fabricated Drum Dryer No. 2 (P017)).
Permit Type:	Administrative Modification
Permit Fee:	$0.00
Issue Date:	10/31/2013
Effective Date:	10/31/2013
Expiration Date:	1/7/2018

Permit Evaluation Report (PER) Annual Date: Jan 1 - Dec 31, Due Feb 15

This document constitutes issuance to:

Firestone Polymers
381 W WILBETH ROAD
AKRON, OH 44301

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

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

Akron Regional Air Quality Management District
146 South High Street, Room 904
Akron, OH 44308
(330)375-2480

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: P0115674
Permit Description: Agency-initiated administrative modification to correct the monitoring and record keeping requirements for the flare and the reporting requirements for the flare and the thermal oxidizer. (This permit consists of the Synthetic Rubber Pilot Plant (P005), the Fabricated Batch Crumb Desolventizing System (P016) and the Fabricated Drum Dryer No. 2 (P017)).

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

Emissions Unit ID:	**P017**
Company Equipment ID:	Fabricated Drum Dryer No. 2 (East)
Superseded Permit Number:	P0110473
General Permit Category and Type:	Not Applicable

Group Name: Group 1

Emissions Unit ID:	**P005**
Company Equipment ID:	Synthetic Rubber Pilot Plant - Vessels & Piping
Superseded Permit Number:	P0110473
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**P016**
Company Equipment ID:	Fabricated Batch Crumb Desolventizing System
Superseded Permit Number:	P0110473
General Permit Category andType:	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. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

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

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

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

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

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

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

7. What reports must I submit under this permit?

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

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

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit 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 [DO/LAA] 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 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 emission 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 beingpermanently shut down without first applying for and obtaining a permit pursuantto OAC Chapter 3745-31.

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) 2, 3, 4, 5, 6 and 7.

2. Combined emissions from emissions units P005, P016 and P017 shall not exceed 8.0 tons of n-hexane (HAP) and 15.0 tons of Mixed Hexane Solvent (VOC) per rolling, 12-month period.

3. For the purposes of this permit, the following definitions apply:

   a) "Mixed Hexane Solvent" is a mixture of C6 saturated hydrocarbon compounds used as process solvents, of which Firestone has determined that typically no more than 68.4% consists of the HAP n-hexane.

   b) "Solvent Received" is the net weight in pounds of the Mixed Hexane Solvent received on site at Firestone in each tank car (weight of filled tank car minus weight of empty tank car), totaled for all tank cars received in each month.

   c) "Solvent Collected" (for shipment to the Firestone recovery operation) is the net weight in pounds (weight of filled tank car minus weight of empty tank car minus weight of rubber as determined by laboratory analysis) of the collected Mixed Hexane Solvent, totaled for all tank cars shipped in each month.

   d) "Net Usage" is the difference between Solvent Received and Solvent Collected.

4. As a voluntary federally enforceable condition designed to limit potential emissions to below the major source level, the following process throughput parameters shall not exceed the limits set forth below (for combined emissions units P005, P016 and P017):

   a) Solvent Received shall not exceed 2628 tons per rolling, 12-month period, of which no more than 1800 tons per rolling, 12-month period shall be n-hexane and, of the balance, no more than a "de minimis" quantity shall be organic compounds classified as hazardous air pollutants (HAPs). "De minimis", for the purposes of this permit, shall be defined as less than or equal to 1%, by weight, of each shipment of Mixed Hexane Solvent.

   b) Net Usage shall not exceed 552 tons per rolling, 12-month period, of which no more than 378 tons per rolling, 12-month period shall be n-hexane and, of the balance, no more than a "de minimis" quantity shall be organic compounds classified as HAPs. "De minimis", for the purposes of this permit, shall be defined as less than or equal to 1%, by weight, of each shipment of Mixed Hexane Solvent.

5. The permittee shall record the following information each month:

   a) the monthly total of Solvent Received, in tons;

   b) the monthly total of n-hexane in Solvent Received,in tons;

   c) the monthly total of Solvent Collected,in tons;

   d) the monthly total of n-hexane in Solvent Collected,in tons;

   e) the monthly Net Usage, in tons;

   f) the monthly n-hexane Net Usage, in tons;

   g) the rolling, 12-month total of Solvent Received, in tons;

   h) the rolling, 12-month total of n-hexane in Solvent Received, in tons;

   i) the rolling, 12-month Net Usage, in tons;

   j) the rolling, 12-month n-hexane Net Usage, in tons;

   k) the supplier's analysis of the percentage, by weight, of n-hexane in each shipment of Mixed Hexane Solvent; and

   l) the supplier's analysis of the percentage, by weight, of organic compounds, other than n-hexane, that are classified as HAPs in each shipment of Mixed Hexane Solvent.

6. The permittee shall submit quarterly deviation (excursion) reports that identify:

   a) all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

      (1) all exceedances of the rolling, 12-month total of Solvent Received limitation;

      (2) all exceedances of the rolling, 12-month total of n-hexane in Solvent Received limitation;

      (3) all exceedances of the rolling, 12-month Net Usage limitation;

      (4) all exceedances of the rolling, 12-month n-hexane Net Usage limitation;

      (5) all exceedances of the weight percentage limitation of n-hexane in each shipment of Mixed Hexane Solvent; and

      (6) allexceedances of the weight percentage limitation of organic compounds, other than n-hexane, that are classified as HAPs in each shipment of Mixed Hexane Solvent.

b) the probable cause of each deviation (excursion);

c) any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d) the magnitude and duration of each deviation (excursion).

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).

7. Compliance with the Emissions Limitations and/or Control Requirements specified in 2 above shall be determined in accordance with the following methods:

a) Emission Limitation:

Combined emissions from emissions units P005, P016 and P017 shall not exceed 8.0 tons of n-hexane (HAP) and 15.0 tons of Mixed Hexane Solvent (VOC) per rolling, 12-month period.

Applicable Compliance Method:

Net Usage is deemed to represent all process emissions before controls. All such processes are controlled by either the flare or thermal oxidizer from which no more than two percent of incoming hydrocarbons are emitted. Based upon the rolling, 12-month Net Usage limitations of 552 tons Mixed Hexane Solvent (VOC) and 378 tons n-hexane (HAP), the corresponding rolling, 12-month, restricted potential to emit is 11.04 tons of VOC (versus 15.0 tons allowable) and 7.56 tons of the HAP n-hexane (versus 8.0 tons allowable). The flare and the enclosed combustion device are each designed to achieve a 98% reduction in VOC emissions, by weight, when operated in accordance with the terms of this permit. Hence, compliance with solvent usage limits and control device operating requirements will ensure compliance with these emission limitations.

C. Emissions Unit Terms and Conditions

1. P017, Fabricated Drum Dryer No. 2 (East)

Operations, Property and/or Equipment Description:

Fabricated Drum Dryer No. 2 (East)

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

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

a. None.

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

a. b)(1)c., b)(2)a., b)(2)b., b)(2)c., c)(1), d)(1), d)(2), d)(3), d)(4), d)(5), d)(6), d)(7), e)(1), e)(2), e)(3), f)(1), f)(2), f)(3)a. and f)(3)b.

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)	The volatile organic compound (VOC) emissions from this emissions unit shall not exceed 300 pounds per hour.
b.	OAC rule 3745-21-09(ZZ)(1)(b)	The flare shall meet the requirements of paragraphs (DD)(10)(d), (DD)(10)(e)and (DD)(10)(f) of OAC rule 3745-21-09. See b)(2)a., b)(2)b. and d)(4) below.
c.	OAC rule 3745-31-05(D) (Synthetic Minor to Avoid Title V)	See 2 through 7 of Section B. Facility-Wide Terms and Conditions. The condenser stream shall be vented to a flare designed and operated to reduce VOC emissions by at least ninety-eight percent (98%), by weight. The enclosure stream shall be vented to an enclosed combustion device that is

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		designed and operated to reduce VOC emissions by at least 98%, by weight. See b)(2)c. below.

(2) Additional Terms and Conditions

a. The flare shall meet the following requirements:

i. The flare shall be designed for and operated with no visible emissions as determined by USEPA Method 22, except for periods not to exceed a total of five minutes during any one hundred twenty consecutive minutes.

ii. The flare shall be operated with a pilot flame. The flame shall be present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame.

iii. The flare shall be non-assisted.

iv. The net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be two hundred Btu/scf or greater.

v. The flare shall be designed and operated with an actual exit velocity, as determined by the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than sixty feet per second.

b. The flare shall be operated at all times when the emissions may be vented to it.

c. The enclosed combustion device shall be operated in accordance with design specifications and good engineering practice.

c) Operational Restrictions

(1) The maximum annual operating hours for this emissions unit shall not exceed 411, based upon a rolling, 12-month summation of the operating hours.

d) Monitoring and/or Recordkeeping Requirements

(1) In order to maintain compliance with the applicable emission limitation contained in this permit, the acceptable average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit controlled by the thermal oxidizer is in operation, shall not be less than 1350 degrees Fahrenheit or shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit was in compliance.

(2) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder that measures and records the combustion temperature within the thermal oxidizer 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 temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The permittee shall collect and record the following information each day the emissions unit is in operation:

a. all 3-hour blocks of time, when the emissions unit controlled by the thermal oxidizer was in operation, during which the average combustion temperature within the thermal oxidizer was less than 1350 degree Fahrenheit or was more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit wasin compliance; and

b. a log or record of the operating time for the capture (collection) system, thermal oxidizer, monitoring equipment, and the associated emissions unit.

These records shall be maintained at the facility for a period of three years.

(3) Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

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

f. a description of the corrective action;

g. the date corrective action was completed;

h. the date and time the deviation ended;

i. the total period of time (in minutes) during which there was a deviation;

j. the temperature readings immediately after the corrective action was implemented; and

k. the name(s) of the personnel who performed the work.

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

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(4) The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design and the requirements contained in this permit.

(5) The permittee shall properly install, operate and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

(6) The permittee shall record the following information each day for the flare and process operations:

a. all periods during which the pilot flame is not functioning properly; and

b. a log or record of the operating times for the capture (collection) system, the flare, the monitoring equipment, and the associated emissions unit.

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

a. the operating hours for each month; and

b. the rolling, 12-month summation of the operating hours.

e) Reporting Requirements

(1) The permittee shall submit quarterly summaries of the following records:

a. all 3-hour blocks of time (when the emissions unit was in operation) during which the average combustion temperature within the thermal oxidizer was less than 1350 degree Fahrenheit or was more than 50 degrees Fahrenheit below the average temperature maintained during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;

b. a log of the operating time for the capture system, thermal oxidizer, monitoring equipment, and the emissions unit(s); and

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 (excursion) reports that identify:

a. all deviations (excursions) of the following emission limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

i. all exceedances of the rolling, 12-monthrestriction on the hours of operation for this emissions unit;

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, thepermittee 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).

(3) The permittee shall submit quarterly summaries of the following records:

a. a log of operating time for the capture (collection) system, the flare, the monitoring equipment, and the associated emissions unit; and

b. all periods of time during which the pilot flame was not functioning properly. The reports shall include the date, time and duration of each such period.

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.

(4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The PER shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

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 was conducted on September 5, 2013.

b. The emission testing was conducted to demonstrate compliance with the control efficiency limitation for the enclosed combustion device.

c. The control efficiency (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 OAC rule 3745-21-10 or an alternative test protocol approved by the Ohio EPA. 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.

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 appropriate Ohio EPA District Office or local air agency. 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 appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency.

(2) The permittee shall conduct an initial flare compliance assessment for this emissions unit in accordance with the following requirements:

a. The initial flare compliance assessmentwas conducted on June 20, 2013.

b. The initial flare compliance assessmentwas conducted to demonstrate compliance with the net heating value for the gas being combusted and the maximum permitted exit velocity.

c. The following test method(s) and calculations shall be employed to demonstrate compliance with the allowable net heating value for the gas being combusted and the actual exit velocity:

i. The net heating value of the gas being combusted in the flare shall be calculated using the following equation:

$$H_T = k \sum_{i=1}^{n} C_i H_i$$

where:

H_T = net heating value of the sample, in mega joules per standard cubic meter (MJ/scm); where the net enthalpy per mole of off gas is based on combustion at 25 degrees Celsius and 760 mm Hg, but the standard temperaturefor determining the volume corresponding to one mole is 20 degrees Celsius;

k = constant, 1.740 x 10^{-7} (1/ppm) (g mole/scm) (MJ/kcal), where the standard temperature for “g mole/scm” is 20 degrees Celsius;

C_i = concentration of sample component “i” in ppm on a wet basis, as measured for organics by Reference Method 18, and ASTM D1946-77 reported on a wet basis;

H_i = net heat of combustion of sample component “i”, in kilocalories per gram mole (kcal/g mole). The heat of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated;

i = subscript denoting a specific component in the sample; and

n = total number of components within the sample.

ii. The actual exit velocity of a flare shall be calculated by dividing the volumetric flow rate (in units of standard temperature and pressure) of the flare header or headers that feed the flare, as determined by USEPA Methods 2, 2A, 2C or 2D as appropriate, by the unobstructed (free) cross-

sectional area of the flare tip, as determined by design and engineering principles.

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 appropriate Ohio EPA District Office or local air agency. 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 appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency.

(3) 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:

flare designed and operated to reduce VOC emissions by at least 98%, by weight

Applicable Compliance Method:

Compliance with the allowable destruction of VOC above shall be demonstrated based upon the results of initial flare compliance assessment conducted in accordance with the procedures and test methods as outlined in f)(2) above for the net heating value and the actual exit velocity.

b. Emission Limitation:

enclosed combustion device designed and operated to reduce VOC emissions by at least 98%, by weight

Applicable Compliance Method:

Compliance with the allowable control efficiency for VOC above shall be demonstrated based upon the results of emission testing conducted in accordance with the procedures and test methods as outlined in f)(1) above.

c. Emission Limitation:

The VOC emissions from this emissions unit shall not exceed 300 pounds per hour.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly allowable VOC emission limitation above based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A, as appropriate, of 40 CFR Part 60, Appendix A.

d. Emission Limitation:

The flare shall be designed for and operated with no visible emissions except for periods not to exceed a total of five minutes during any one hundred twenty consecutive minutes.

Applicable Compliance Method:

If required, compliance with the visible emission limitation above shall be demonstrate through visible emission observations performed in accordance with Method 22 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.

2. Emissions Unit Group -Group 1: P005,P016,

EU ID	Operations, Property and/or Equipment Description
P005	Synthetic Rubber Pilot Plant - Vessels & Piping
P016	Fabricated Batch Crumb Desolventizing System

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

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

a. None.

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

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

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 3745-21-09(ZZ)(1)(b)	The flare shall meet the requirements of paragraphs (DD)(10)(d), (DD)(10)(e)and (DD)(10)(f) of OAC rule 3745-21-09. See b)(2)c., b)(2)d. and d)(1) below.
b.	OAC rule 3745-31-05(D)	See 2 through 7 of Section B. Facility-Wide Terms and Conditions. Flare designed and operated to reduce volatile organic compound (VOC) emissions by at least ninety-eight percent (98%), by weight. See b)(2)a. and b)(2)b. below.

(2) Additional Terms and Conditions

a. The equipment covered by emissions unit P005 shall be vented to a flare that is designed and operated to reduce the VOC emissions by at least 98%, by weight.

b. For emissions unit P016, the desolventizer and associated hexane recovery condenser shall be vented to a flare that is designed and operated to reduce the VOC emissions by at least 98%, by weight.

c. The flare shall meet the following requirements:

i. The flare shall be designed for and operated with no visible emissions as determined by USEPA Method 22, except for periods not to exceed a total of five minutes during any one hundred twenty consecutive minutes.

ii. The flare shall be operated with a pilot flame. The flame shall be present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame.

iii. The flare shall be non-assisted.

iv. The net heating value of the gas being combusted in the flare, as determined by the method specified in paragraph (P)(2) of rule 3745-21-10 of the Administrative Code, shall be two hundred Btu/scf or greater.

v. The flare shall be designed and operated with an actual exit velocity, as determined by the method specified in paragraph (P)(3) of rule 3745-21-10 of the Administrative Code, less than sixty feet per second.

d. The flare shall be operated at all times when the emissions may be vented to it.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design and the requirements contained in this permit.

(2) The permittee shall properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit(s) is/are in operation. The monitoring device and any recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

(3) The permittee shall record the following information each day for the flare and process operations:

a. all periods during which the pilot flame is not functioning properly; and

b. a log or record of the operating times for the capture (collection) system, the flare, the monitoring equipment, and the associated emissions units.

e) Reporting Requirements

(1) The permittee shall submit quarterly summaries of the following records:

a. a log of operating time for the capture (collection) system, the flare, the monitoring equipment, and the associated emissions units; and

b. all periods of time during which the pilot flame was not functioning properly. The reports shall include the date, time and duration of each such period.

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 an annual Permit Evaluation Report (PER) to the Ohio EPA. The PER must be completed electronically and submitted via the Ohio EPA eBusiness Center: Air Services by the due date identified in the Authorization section of this permit. The PER shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

f) Testing Requirements

(1) The permittee shall conduct an initial flare compliance assessment for this emissions unit in accordance with the following requirements:

a. The initial flare compliance assessmentwas conducted on June 20, 2013.

b. The initial flare compliance assessmentwas conducted to demonstrate compliance with the net heating value for the gas being combusted and the maximum permitted exit velocity.

c. The following test method(s) and calculations shall be employed to demonstrate compliance with the allowable net heating value for the gas being combusted and the actual exit velocity:

i. The net heating value of the gas being combusted in the flare shall be calculated using the following equation:

$$H_T = k \sum_{i=1}^{n} C_i H_i$$

where:

H_T = net heating value of the sample, in mega joules per standard cubic meter (MJ/scm); where the net enthalpy per mole of off gas is based on combustion at 25 degrees Celsius and 760 mm Hg, but the standard temperaturefor determining the volume corresponding to one mole is 20 degrees Celsius;

k = constant, 1.740 x 10^{-7} (1/ppm) (g mole/scm) (MJ/kcal), where the standard temperature for "g mole/scm" is 20 degrees Celsius;

C_i = concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18, and ASTM D1946-77 reported on a wet basis;

H_i = net heat of combustion of sample component "i", in kilocalories per gram mole (kcal/g mole). The heat of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated;

i = subscript denoting a specific component in the sample; and

n = total number of components within the sample.

ii. The actual exit velocity of a flare shall be calculated by dividing the volumetric flow rate (in units of standard temperature and pressure) of the flare header or headers that feed the flare, as determined by USEPA Methods 2, 2A, 2C or 2D as appropriate, by the unobstructed (free) cross-sectional area of the flare tip, as determined by design and engineering principles.

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 appropriate Ohio EPA District Office or local air agency. 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 appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

f. Personnel from the appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency.

(2) 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:

flare designed and operated to reduce VOC emissions by at least 98%, by weight

Applicable Compliance Method:

Compliance with the allowable destruction of VOC above shall be demonstrated based upon the results of initial flare compliance assessment conducted in accordance with the procedures and test methods as outlined in f)(1) above for the net heating value and the actual exit velocity.

b. Emission Limitation:

The flare shall be designed for and operated with no visible emissions except for periods not to exceed a total of five minutes during any one hundred twenty consecutive minutes.

Applicable Compliance Method:

If required, compliance with the visible emission limitation above shall be demonstrate through visible emission observations performed in accordance with Method 22 of 40 CFR Part 60, Appendix A.

g) Miscellaneous Requirements

(1) None.