



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: July 29, 2010

RE: Wingfoot Commercial Tire Systems, LLC / 097-29280-00320

FROM: Matthew Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

## Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER-AM.dot12/3/07



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Scott Swinford  
Wingfoot Commercial Tire Systems, LLC  
1950 W Edgewood Ave  
Indianapolis, Indiana 46217

July 29, 2010

Re: Exempt Operation Status,  
097-29280-00320

Dear Scott Swinford:

The application from Wingfoot Commercial Tire Systems, LLC, received on May 20, 2010, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary tire retreading operation located at 1950 W Edgewood Ave, Indianapolis, Indiana 46217 is classified as exempt from air pollution permit requirements:

- (a) Two (2) tire buffers, identified as P01A, constructed in 1997 and P01B, constructed in 2007, with a maximum capacity to grind 40 tires per hour combined, using a water mist with direct drive blower, identified as C01, which goes directly into a trailer, approved for construction in 2010. The trailer will be equipped with filter brackets and filters to minimize particulate emissions;
- (b) One (1) natural gas fired boiler, identified as B01, constructed in 1997 with a maximum heat input capacity of 1.7 million Btu per hour, exhausting to stack S02;
- (c) One (1) Tire Curing Operation, constructed in 1997 consisting of:
  - (1) Two (2) Curing Chambers each with a maximum capacity of 23 tires per batch per cure chamber, curing 3.5 pounds of uncured rubber per tire. Each batch takes 3 hours to fully cure. The maximum cure cycle per chamber is 2,912 times per year; and
  - (2) Four (4) Mold Cure Processes each with a maximum capacity of 400 tires per month. The process would attach uncured cushion gum rubber of 3.5 lbs per tire and 25 lbs of uncured retread cap to the tire. The mold cure process takes approximately 1 hour per tire to complete.
- (d) One (1) tread extruder, constructed in 1997, processing a maximum of 25 pounds of tread rubber onto a maximum of 3.2 tires per hour;
- (e) One (1) cushion extruder, constructed in 1997, processing a maximum of 3.5 pounds of extruded rubber onto a maximum of 14.4 tires per hour;
- (f) One (1) tire repair operations, constructed in 1997 using organic materials, including vulcanizing cement (maximum of 260 gallons per year) and Butyl liner repair sealer (maximum of 350 gallons per year); and
- (g) One (1) Tire Painting Booth, constructed in 2006, using approximately 0.0388 gallons of tire paint per tire. The paint has a density of 8.34 lb/gallon. The paint spray booth system does not use compressed air for atomization. The tire paint machine is equipped with air filtration to capture any over spray.

## **Justification for the transition from a Minor Source Operating Permit (MSOP) 097-20528-00320 to an Exemption**

The existing source was issued MSOP M097-20528-00320 on October 21, 2005. The potential to emit PM from the tire buffers, identified as P01A and P01B exceed 250 tons per year. The source requests to replace the cyclone/fan trailer system to control the particulate matter on the tire grinding operations with a direct drive blower to a trailer with bracket filters and filters to minimize particulate emission. The source submitted a justification for the new tire grinding collection system to be an integral part of the process from an economical standpoint. IDEM, OAQ evaluated the justification and agreed that the tire grinding dust collection system be considered as an integral part of the tire grinding operation.

The following conditions shall be applicable:

1. 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements)  
The potential to emit of particulate matter (PM) is greater than 250 tons per year uncontrolled; however, this existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM is limited to less than 250 tons per year. The potential to emit of all other attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to comply with the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements), the source shall comply with the following:

- (a) The particulate emissions from the tire grinding operation shall not exceed 1.74 pounds per hour based on the process weight rate equal to 562 pounds of rubber extruded per hour.

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

The water mister and the tire grinder dust collection system with filters from the trailer vents shall be in operation at all times the above listed facility is in operations in order to comply with this limit.

2. 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
  - (1) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
3. 326 IAC 326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)  
The one (1) natural gas fired boiler, identified as B02, constructed in 1997, with a maximum capacity of 1.7 MMBtu/hr, must comply with the requirements of 326 IAC 6-2-4. Pursuant to 326 IAC 6-2-4(a), the maximum capacity of this boiler is less than 10 million British thermal units per hour (MMBtu/hr), the particulate emissions from the one (1) natural gas fired boiler (B01) shall not

exceed 0.60 pounds per MMBtu heat input. For Q greater than or equal to ten (10) MMBtu/hr, the emission limitations are based on the following equation given in 326 IAC 6-2-4

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

$$Pt = 1.09/(1.70)^{0.26} = 0.64 \text{ (lb MMBtu) heat input.}$$

4. 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
 Pursuant to 326 IAC 6-3-2, the particulate emissions from the tire grinding operation at this source shall be limited as shown in the following table:

Emission Unit Description	Emission Unit ID #	Maximum Process Weight Rate (tons/hour)	326 IAC 6-2-3 Allowable Particulate Emissions (lbs/hour)	Uncontrolled PTE of PM (lbs/hour)	Controlled PTE of PM (lbs/hr)
Tire Grinding	P01A and P01B	0.28	1.74	306.28	0.76

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

The water mister and the tire grinder dust collection system with filters from the trailer vents shall be in operation at all times the above listed facility is in operation in order to comply with this limit

5. 326 IAC 6-4 (Fugitive Dust Emissions Limitations)  
 Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

A copy of the Exemption is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

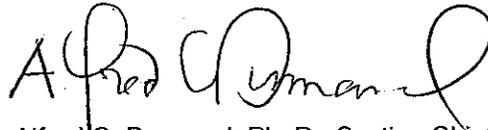
An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Marcia Earl, OAQ,

Wingfoot Commercial Tire Systems, LLC  
Indianapolis, Indiana  
Permit Reviewer: Marcia Earl

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Exemption 097-20528-00320

100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-233-0863 or  
at 1-800-451-6027 (ext 3-0863).

Sincerely,

A handwritten signature in black ink, appearing to read "Alfred C. Dumauval". The signature is fluid and cursive, with a large initial "A" and a long, sweeping tail.

Alfred C. Dumauval, Ph. D., Section Chief  
Permits Branch  
Office of Air Quality

ACD/me

cc: File – Marion County  
Marion County Health Department  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a Minor Source Operating Permit  
(MSOP) Transitioning to an Exemption

**Source Description and Location**

**Source Name:** Wingfoot Commercial Tire Systems, LLC  
**Source Location:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**County:** Marion County  
**SIC Code:** 7534  
**Exemption No.:** 097-29280-00320  
**Permit Reviewer:** Marcia Earl

On May 20, 2010, the Office of Air Quality (OAQ) received an application from Wingfoot Commercial Tire Systems, LLC related to the transition of a Minor Source Operating Permit (MSOP) to an Exemption. The existing source was issued an MSOP M097-20528-00320 on October 21, 2005. The potential to emit PM from the tire buffers, identified as P01A and P01B exceed 250 tons per year. The source requests to replace the cyclone/fan trailer system to control the particulate matter on the tire grinding operations with a direct drive blower to a trailer with bracket filters and filters to minimize particulate emission. The source submitted a justification for the new tire grinding collections system to be an integral part of the process from an economical standpoint. IDEM, OAQ evaluated the justification and agreed that the tire grinding dust collection system be considered as an integral part of the tire grinding operation.

**Existing Approvals**

This source has been operating under the previous Minor Source Operating Permit (MSOP) M097-20528-00320, issued on October 21, 2005.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Due to this application, the source is transitioning from a Minor Source Operating Permit to an Exemption.

**County Attainment Status**

The source is located in Marion County.

<b>Pollutant</b>	<b>Designation</b>
SO <sub>2</sub>	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of Indianapolis bounded by 11 <sup>th</sup> Street on the north; Capitol Avenue on the west; Georgia Street on the south; and Delaware Street on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of Indianapolis and Marion County.
O <sub>3</sub>	Attainment effective November 8, 2007, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Attainment effective July 10, 2000, for the part of Franklin Township

	bounded by Thompson Road on the south; Emerson Avenue on the west; Five Points Road on the east; and Troy Avenue on the north. Attainment effective July 10, 2000, for the part of Wayne Township bounded by Rockville Road on the north; Girls School Road on the east; Washington Street on the south; and Bridgeport Road on the west. The remainder of the county is not designated..
<sup>1</sup> Attainment effective October 18, 2000, for the 1-hour ozone standard for the Indianapolis area, including Marion County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour designation was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for PM <sub>2.5</sub> .	

- (a) **Ozone Standards**  
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM<sub>2.5</sub>**  
Marion County has been classified as nonattainment for PM<sub>2.5</sub> in 70 FR 943 dated January 5, 2005. On May 8, 2008, U.S. EPA promulgated specific New Source Review rules for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. Therefore, direct PM<sub>2.5</sub> and SO<sub>2</sub> emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.
- (c) **Other Criteria Pollutants**  
Marion County has been classified as attainment or unclassifiable in Indiana for PM<sub>10</sub>, SO<sub>2</sub>, CO and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

**Fugitive Emissions**

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

**Background and Description of Emission Units and Pollution Control Equipment**

The Office of Air Quality (OAQ) has reviewed an application, submitted by Wingfoot Commercial Tire System, LLC on May 20, 2010, relating to an existing stationary tire retreading operation. The source has removed the one (1) Rimm-Clean shot blast machine and the one (1) powder coating booth in 2008.

The source requests to replace the cyclone/fan trailer system used for particulate control on the two (2) tire grinder with a direct drive blower which is blown along an enclosed tube into a trailer equipped with filter brackets and filters to minimize particulate emissions and has provided documentation that this equipment be considered integral to the process due to an economical standpoint. IDEM, OAQ has agreed with the integral to the process and therefore, the permitting level is determined using the potential to emit after the tire grinding dust collection system. With the removal of 2 emission units and the tire grinding operation being integral to the process, the potential to emit of all criteria emission are less than 5 tons per year.

The source consists of the following existing emission units:

- (a) Two (2) tire buffers, identified as P01A, constructed in 1997 and P01B, constructed in

2007, with a maximum capacity to grind 40 tires per hour combined, using a water mist with direct drive blower (tire grinding collection system), identified as C01 which goes directly into a trailer, approved for construction in 2010. The trailer will be equipped with filter brackets and filters to minimize particulate emissions;

- (b) One (1) natural gas fired boiler, identified as B01, constructed in 1997 with a maximum heat input capacity of 1.7 million Btu per hour, exhausting to stack S02;
- (c) One (1) Tire Curing Operation, constructed in 1997 consisting of:
  - (1) Two (2) Curing Chambers each with a maximum capacity of 23 tires per batch per cure chamber, curing 3.5 pounds of uncured rubber per tire. Each batch takes 3 hours to fully cure. The maximum cure cycle per chamber is 2,912 times per year; and
  - (2) Four (4) Mold Cure Processes each with a maximum capacity of 400 tires per month. The process would attach uncured cushion gum rubber of 3.5 lbs per tire and 25 lbs of uncured retread cap to the tire. The mold cure process takes approximately 1 hour per tire to complete.
- (d) One (1) tread extruder, constructed in 1997, processing a maximum of 25 pounds of tread rubber onto a maximum of 3.2 tires per hour;
- (e) One (1) cushion extruder, constructed in 1997, processing a maximum of 3.5 pounds of extruded rubber onto a maximum of 14.4 tires per hour;
- (f) One (1) tire repair operations, constructed in 1997 using organic materials, including vulcanizing cement (maximum of 260 gallons per year) and Butyl liner repair sealer (maximum of 350 gallons per year); and
- (g) One (1) Tire Painting Booth, constructed in 2006, using approximately 0.0388 gallons of tire paint per tire. The paint has a density of 8.34 lb/gallon. The paint spray booth system does not use compressed air for atomization. The tire paint machine is equipped with air filtration to capture any over spray.

<b>“Integral Part of the Process” Determination</b>
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Wingfoot Commercial Tire Systems, LLC has submitted the following information to justify why the tire grinding collection system should be considered an integral part of the tire grinding operation:

- (a) The tire buffing collection system should be considered an integral part of the tire buffing process due to the significant economic benefit gained by collecting the buffed rubber for recycle and resale. The tire buffing process is not only accomplished with minimal PM emissions but also saves approximately 600,000 pounds of buffed rubber from ending up in a landfill. This alone saves thousand of dollars in transportation, and proper disposal of the buffed rubber material. The recycled buffed rubber is used in numerous products matting, truck bed lines, boiler fuel, etc. The retreading process at this facility not only prevents over 40,000 tires a year from being scrapped, possibly to a landfill, but allows a useful return to a productive and valuable like cycle of up to 800,000 additional miles as a retreaded tire on transportation equipment. The retreading process in turn saves valuable resource since 40,000 new/raw material tires were not produced. The cost of installing and operating a typical buffed rubber collection system and the benefit gained from the resale of the recycled material is as follows:

Assuming a life span of 10 years, the annualized initial capital cost for a typical blower and collection system of the buffed rubber is:  $\$12,000 / 10 \text{ years} = \$1,200 \text{ per year}$ .

The buffed rubber collection system has an annual operating cost of approximately \$750 per year; this cost is primarily associated with electrical consumption and maintenance issues.

The recycled buffed rubber is collected for resale at approximately 0.045 cents per pound. This equates to the following: Estimated yearly production run of 45,000 (buffed) tires x 14/05 lb per tire removed (buffed rubber) = 632,250 lb buffed rubber x 0.045 = \$28,415/12 months = \$2,370 per month revenue plus other benefits as described above.

Based on the above information the costs and benefits are: \$28,415 - \$1,200 - \$750 = \$26,465 per year.

- (b) The shearing action of the rasp while buffing the tire creates elevated temperatures and potential sparks; this fire potential is somewhat countered by the water mister used at the point of contact of the rasp to the tire while buffing. The water mister will extend rasp cutting life, reduce emissions, and mitigate conditions relative to fire potential. The tire buffing process using a water mister saves on production cost by extending rasp/blade life, increase efficiency, reduces PM emissions, and reduces fire potential which would create safety/exposure issues to employees and fire fighters. The buffed rubber will continue through the blower and into the collection trailer for transport of recycle/resale.

IDEM, OAQ has evaluated the information submitted and agrees that the water mister and tire grinding collections system should be considered an integral part of the tire grinding process. This determination is based on the fact that the water mister and grinding collections system has an overall net economic effect, since it prevents fires that would result in damage to the grinding unit and unplanned shutdowns of the process. Therefore, the permitting level will be determined using the potential to emit after the water misters and grinding collections system. Operating conditions in the proposed permit will specify that the water mister and the grinding collections system shall operate at all times when the tire grinding operation is in operation.

**Enforcement Issues**

There are no pending enforcement actions related to this source.

**Emission Calculations**

See Appendix A, pages 1 through 14 of this TSD for detailed emission calculations.

**Permit Level Determination – Exemption**

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10*	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Total HAPs	Worst Single HAP
Boilers (BO1)	0.01	0.06	0.06	4.47E-03	0.74	0.04	0.63	1.40E-02	Hexane 1.34E-02
Tire Grinding (P01A and P01B)	1.88	3.10E-03	3.10E-03	0.00	0.00	0.00	0.00	0.70	1,3 Butadiene 0.033
Cushion Extruder	1.72E-06	1.72E-06	1.72E-06	0.00	0.00	2.71E-03	0.00	7.77E-03	Toluene 2.04E-03

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10*	PM2.5	SO <sub>2</sub>	NOx	VOC	CO	Total HAPs	Worst Single HAP
Tread Extruder	2.72E-06	2.72E-06	2.72E-06	0.00	0.00	4.31E-03	0.00	1.23E-02	Acetophenone 1.16E-03
Mold Cure Process	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.32	N/A
<b>Curing Chamber</b>	0.00	0.00	0.00	0.0	0.00	0.03	0.00	2.17	N/A
Tire Paint Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	Formaldehyde 0.15
Tire Repair	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	Carbon Black 0.38
<b>Total PTE of Entire Source</b>	1.89	0.06	0.06	4.47E-03	0.74	2.08	0.63	4.23	N/A
Exemptions Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10

N/A. = not applicable  
 \* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of all regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

**Federal Rule Applicability Determination**

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standards for the Rubber Tire Manufacturing Industry, 40 CFR 60, Subpart BBB (60.540 through 60.548) (326 IAC 12), are not included in the permit since this source is a tire retreading operation and not a rubber tire manufacturing plant.
- (b) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Rubber Tire Manufacturing Industry, 40 CFR 63, Subpart XXXX (63.5980 through 63.6015) (326 IAC 20), are not included in the permit since this source is a tire retreading operation and not a rubber tire manufacturing plant and is not a major source of Hazardous Air Pollutants.

- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR 63, Subpart HHHHHH (63.11169 through 63.1180) are not included in this permit, since this area source does not perform paint stripping using chemical strippers that contain methylene chloride for the removal of dried paint, does not perform spray application of coatings to motor vehicles, or mobile equipment, and does not perform spray application of coatings that contain chromium, lead manganese, nickel or cadmium to a plastic and /or metal substrates.
- (e) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in this permit renewal.

Compliance Assurance Monitoring (CAM)

- (g) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

<b>State Rule Applicability Determination</b>
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326 IAC 2-1.1-3 (Exemptions)

Exemption applicability is discussed under the Permit Level Determination – Exemption section above.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements)

This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM is limited to less than 250 tons per year and the potential to emit all other attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to comply with the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements), the source shall comply with the following:

- (1) The particulate emissions from the tire grinding operation shall not exceed 1.74 pounds per hour based on the process weight rate equal to 562 pounds of rubber extruded per hour.

Compliance with these limits, combined with the potential to emit PM from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

The water mister and the tire grinder dust collection system with filters from the trailer vents shall be in operation at all times the above listed facility is in operations in order to comply with this limit.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential to emit of any single HAP from the entire facility is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than 5 tons per year. Therefore, this rule does not

apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (1) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

326 IAC 6.5 PM Limitations Except Lake County

This source is not subject to 326 IAC 6.5 because, eventhough it is located in Marion County, its potential to emit (PTE) particulate matter (PM) is less than 100 tons/year and actual emissions are less than 10 tons/year.

326 IAC 8-1-6 (General Volatile Organic Compounds Reduction Requirements)

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

<b>State Rule Applicability – Individual Facilities</b>
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Boiler

326 IAC 326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)

The one (1) natural gas fired boiler, identified as B02, constructed in 1997, with a maximum capacity of 1.7 MMBtu/hr, must comply with the requirements of 326 IAC 6-2-4. Pursuant to 326 IAC 6-2-4(a), the maximum capacity of this boiler is less than 10 million British thermal units per hour (MMBtu/hr), the particulate emissions from the one (1) natural gas fired boiler (B01) shall not exceed 0.60 pounds per MMBtu heat input. For Q greater than or equal to ten (10) MMBtu/hr, the emission limitations are based on the following equation given in 326 IAC 6-2-4

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input.

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's

permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

$$Pt = 1.09/(1.70)0.26 = 0.64 \text{ (lb MMBtu) heat input.}$$

**326 IAC 7-1.1 Sulfur Dioxide Emission Limitations**

The one (1) natural gas fired boiler (B01) is not subject to 326 IAC 7-1.1 because its SO<sub>2</sub> PTE SO<sub>2</sub> is less than 25 tons/year or 10 pounds/hour.

Tire Grinding

**326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)**

Pursuant to 326 IAC 6-3-2, the particulate emissions from the tire grinding operation at this source shall be limited as shown in the following table:

Emission Unit Description	Emission Unit ID #	Maximum Process Weight Rate (tons/hour)	326 IAC 6-2-3 Allowable Particulate Emissions (lbs/hour)	Uncontrolled PTE of PM (lbs/hour)	Controlled PTE of PM (lbs/hr)
Tire Grinding	P01A and P01B	0.28	1.74	306.28	0.76

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

The water mister and the tire grinder dust collection system with filters from the trailer vents shall be in operation at all times the above listed facility is in operations in order to comply with this limit

Tire Extruding Operation

**326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processing)**

The tire extruding operation has potential particulate emissions less than 0.551 pound per hour. Therefore, the tire extruding operation is exempt from 326 IAC 6-3-2.

**326 IAC 8-5-4 (Pneumatic Rubber Tire Manufacturing)**

The source does not manufacture pneumatic rubber, passenger type tires on a mass production basis. Therefore the tire extruding operation is not subject to the provisions of 326 IAC 8-5-4.

Tire Painting Booth

**326 IAC 6-3-2 (Particulate Emissions Limitations for Manufacturing Processes)**

Pursuant to 326 IAC 6-3-2(d), the one (1) tire painting booth shall be controlled by a dry particulate filter, waterwash, or an equivalent device, subject to the following:

- (1) The source shall operate the control device in accordance with the manufacturer's specifications.

- (2) If overspray is visible detected at the exhaust or accumulates on the ground, the source shall inspect the control device and do either of the following no later than four (4) hours after such observation.
  - (A) Repair the control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
  - (B) Operate equipment so that no overspray is visible detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the source shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.

### Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on May 20, 2010.

The operation of this source shall be subject to the conditions of the attached proposed Exemption No. 097-29280-00320. The staff recommends to the Commissioner that this Exemption be approved.

### IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Marcia Earl at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-0863 or toll free at 1-800-451-6027 extension 3-0863.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem](http://www.in.gov/idem)

**Appendix A: Emissions Calculations  
Summary**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

**Uncontrolled**

Emissions Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	HAP	Worse Case HAPs
Boiler B01	0.01	0.06	0.06	4.47E-03	0.74	0.04	0.63	1.40E-02	Hexane 1.34E-02
Tire Grinding*	1341.55	2.22	2.22	0.00	0.00	1.28	0.00	0.70	1.3 Butadiene 6.51E-02
Cushion Extruder	1.72E-06	1.72E-06	1.72E-06	0.00	0.00	2.71E-03	0.00	7.77E-03	Toluene 2.04E-03
Tread Extruder	2.72E-06	2.72E-06	2.72E-06	0.00	0.00	4.31E-03	0.00	1.23E-02	Acetophenone 1.16E-03
Mold Cure Process	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.32	N/A
Curing Chamber	0.00	0.00	0.00	0.00	0.00	0.03	0.00	2.17	N/A
Tire Paint Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	Formaldehyde 0.15
Tire Repair	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.41	Carbon Black 0.38
<b>Total</b>	<b>1341.56</b>	<b>2.27</b>	<b>2.27</b>	<b>4.47E-03</b>	<b>0.74</b>	<b>2.12</b>	<b>0.63</b>	<b>4.23</b>	N/A

**Controlled**

Emissions Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	HAP	Worse Case HAPs
Boiler B01	0.01	0.06	0.06	4.47E-03	0.74	0.04	0.63	1.40E-02	Hexane 1.34E-02
Tire Grinding*	1.88	3.10E-03	3.10E-03	0.00	0.00	1.28	0.00	0.70	1.3 Butadiene 6.51E-02
Cushion Extruder	1.72E-06	1.72E-06	1.72E-06	0.00	0.00	2.71E-03	0.00	7.77E-03	Toluene 2.04E-03
Tread Extruder	2.72E-06	2.72E-06	2.72E-06	0.00	0.00	4.31E-03	0.00	1.23E-02	Acetophenone 1.16E-03
Mold Cure Process	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.32	N/A
Curing Chamber	0.00	0.00	0.00	0.00	0.00	0.03	0.00	2.17	N/A
Tire Paint Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	Formaldehyde 0.15
Tire Repair	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.41	Carbon Black 0.38
<b>Total</b>	<b>1.89</b>	<b>0.06</b>	<b>0.06</b>	<b>4.47E-03</b>	<b>0.74</b>	<b>2.12</b>	<b>0.63</b>	<b>4.23</b>	N/A

\* The water mister and grinding dust collector for the grinding operation is considered integral to the process, therefore, the potential to emit particulate matter (PM) will be taken after controls.

**Appendix A: Emission Calculations**  
**Natural Gas Combustion**  
**MM Btu/hr 0.3 - < 10**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

Heat Input Capacity  
MMBtu/hr

1.70

Potential Throughput  
MMCF/yr

14.89

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
					**see below		
Potential Emission in tons/yr	0.01	0.06	0.06	4.47E-03	0.74	0.04	0.63

\*PM emission factor is filterable PM only. PM10/PM2.5 emission factor is filterable and condensable combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion**  
**MM Btu/hr 0.3 - < 10**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

1.70

14.89

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.56E-05	8.94E-06	5.58E-04	1.34E-02	2.53E-05

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.72E-06	8.19E-06	0.00	2.83E-06	1.56E-05

**Total HAPs      1.40E-02**

**Methodology**

All emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Cubic Feet of Gas  
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03  
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations  
Grinding (buffing)**

**Company Name: Wingfoot Commercial Tire Systems, LLC**  
**Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217**  
**Permit Number: E097-29280-00320**  
**Reviewer: Marcia Earl**  
**Date: June 2010**

Unit	Maximum Hourly Throughput (tires/hr)	Material Removed from each tire (lbs/tire)	Maximum Rubber Extruded (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	PM Emission Factor (lb/lb rubber extruded)	Uncontrolled PM Potential to Emit (tons/yr)	Control Efficiency for Water Mist (%)	Control Efficiency (%)	PM Controlled Potential to Emit (tons/yr)
<b>P01A and P01B</b>	40	14.05	562.00	4923120.00	5.45E-01	1341.55	50.00%	99.86%	1.88

**Methodology**

Maximum Material Removed (lbs/hr) = Maximum Hourly Throughput (tires/hr) \* Material Removed from each tire (lbs/tire)

Maximum Rubber Extruded (lbs/yr) = Maximum Rubber Extruded (lbs/hr) \* 8760 (hr/yr)

Uncontrolled PM Potential to Emit (tons/yr) = Maximum Rubber Extruded (lbs/yr) \* PM Emission Factor (lb/lb rubber extruded)/ 1 ton/2000 lbs

PM Controlled Potential to Emit (tons/yr) = Uncontrolled PM Potential to Emit (tons/yr) \* 1- Control Efficiency for Water Mist \* 1-Control Efficiency/ 1 ton/2000 lbs

Unit	Maximum Hourly Throughput (tires/hr)	Material Removed from each tire (lbs/tire)	Maximum Rubber Extruded (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	PM10 Emission Factor (lb/lb rubber extruded)*	Uncontrolled PM10 Potential to Emit (tons/yr)	Control Efficiency (%)	PM10 Controlled Potential to Emit (tons/yr)
<b>P01A and P01B</b>	40	14.05	562.00	4923120.00	9.00E-04	2.22	99.86%	3.10E-03

**Methodology**

Maximum Material Removed (lbs/hr) = Maximum Hourly Throughput (tires/hr) \* Material Removed from each tire (lbs/tire)

Maximum Rubber Extruded (lbs/yr) = Maximum Rubber Extruded (lbs/hr) \* 8760 (hr/yr)

Uncontrolled PM10 Potential to Emit (tons/yr) = Maximum Rubber Extruded (lbs/yr) \* PM10 Emission Factor (lb/lb rubber extruded)/ 1 ton/2000 lbs

PM10 Controlled Potential to Emit (tons/yr) = Uncontrolled PM10 Potential to Emit (tons/yr) \* 1-Control Efficiency/ 1 ton/2000 lbs

PM2.5	Maximum Hourly Throughput (tires/hr)	Material Removed from each tire (lbs/tire)	Maximum Rubber Extruded (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	PM2.5 Emission Factor (lb/lb rubber extruded)*	Uncontrolled PM2.5 Potential to Emit (tons/yr)	Control Efficiency (%)	PM2.5 Controlled Potential to Emit (tons/yr)
<b>P01A and P01B</b>	40	14.05	562.00	4923120.00	9.00E-04	2.22	99.86%	3.10E-03

\* The emission factor for PM10/PM2.5 comes from an approved stack test conducted on September 2, 2004. The test was taken after the water mister.

**Methodology**

Maximum Material Removed (lbs/hr) = Maximum Hourly Throughput (tires/hr) \* Material Removed from each tire (lbs/tire)

Maximum Rubber Extruded (lbs/yr) = Maximum Rubber Extruded (lbs/hr) \* 8760 (hr/yr)

Uncontrolled PM2.5 Potential to Emit (tons/yr) = Maximum Rubber Extruded (lbs/yr) \* PM10 Emission Factor (lb/lb rubber extruded)/ 1 ton/2000 lbs

PM2.5 Controlled Potential to Emit (tons/yr) = Uncontrolled PM2.5 Potential to Emit (tons/yr) \* 1-Control Efficiency/ 1 ton/2000 lbs

**Appendix A: Emissions Calculations  
PM/PM10/PM2.5, VOC and HAP Emissions  
Tire Grinding HAPs**

**Company Name: Wingfoot Commercial Tire Systems, LLC  
Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
Permit Number: E097-29280-00320  
Reviewer: Marcia Earl  
Date: June 2010**

Truck Tires Ground for retreading:  tires per hour  
Amount of Rubber Ground Off:  lbs/per tire  
Total Amount Rubber Ground Off:  lbs/per hour     lbs/per year

Analyte Name	CAS #	Carcass 30800152 lb/lb rubber removed	Emission (lbs/year)	VOC and HAPs Potential to Emit (tons/year)
<b>Total VOC</b>		5.21E-04	2566.56	1.28
<b>Total Speciated Organics</b>		2.53E-03	12438.51	6.22
<b>Total Organic HAPs</b>		1.27E-04	623.02	0.31
<b>Total Metal HAPs</b>		6.35E-06	31.28	1.56E-02
<b>Total HAPs</b>		1.27E-04	623.02	0.31
1,1,1-Trichloroethane	71-55-6	3.58E-07	1.76	8.81E-04
1,3-Butadiene	106-99-0	2.65E-05	130.28	6.51E-02
2-Butanone	78-93-3	5.13E-07	2.53	1.26E-03
4-Methyl-2-pentanone	108-10-1	1.92E-05	94.34	4.72E-02
Acetophenone	98-86-2	7.13E-07	3.51	1.75E-03
Acrolein	107-02-8	1.68E-06	8.29	4.15E-03
Aniline	62-53-3	1.97E-05	97.16	4.86E-02
Benzene	71-43-2	4.13E-06	20.31	1.02E-02
bis(2-Ethylhexyl)phthalate	117-81-7	7.94E-06	39.11	1.96E-02
Cadmium (Cd) Compounds		8.58E-07	4.22	2.11E-03
Carbon Disulfide	75-15-0	2.58E-06	12.68	6.34E-03
Carbonyl Sulfide	463-58-1	8.70E-06	42.84	2.14E-02
Chromium (Cr) Compounds		1.44E-06	7.08	3.54E-03
Di-n-butylphthalate	84-74-2	2.24E-06	11.04	5.52E-03
Dibenzofuran	132-64-9	1.59E-07	0.78	3.91E-04
Hexane	110-54-3	1.60E-05	78.53	3.93E-02
Isooctane	540-84-1	1.09E-05	53.66	2.68E-02
Lead (Pb) Compounds		2.02E-06	9.96	4.98E-03
m-Xylene + p-Xylene		2.23E-06	10.96	5.48E-03
Methylene Chloride	75-09-2	2.50E-07	1.23	6.15E-04
Naphthalene	91-20-3	5.81E-07	2.86	1.43E-03
Nickel (Ni) Compounds		2.03E-06	10.01	5.01E-03
o-Toluidine	95-53-4	2.55E-06	12.54	6.27E-03
Phenol	108-95-2	1.66E-06	8.16	4.08E-03
Toluene	108-88-3	6.30E-06	31.02	1.55E-02
Trichloroethene	79-01-6	1.95E-06	9.62	4.81E-03

Total PTE HAPs (tons/year)

VOC emissions (tons / yr) = tires ground / hr \* lbs rubber buffed / tire ground \* lb VOC emission lb/lb \* 8760 / 1 tons/2000 lbs

HAP emissions (tons/yr) - tires ground/day \* lbs rubber buffed /tire ground \* lb HAP/lb rubber buffed \*1 ton/2000 lbs \* 365 day/yr

**Appendix A: Emissions Calculations  
PM/PM10/PM2.5  
Extruders**

**Company Name: Wingfoot Commercial Tire Systems, LLC  
Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
Permit Number: E097-29280-00320  
Reviewer: Marcia Earl  
Date: June 2010**

**Cushion Extruder**

	Maximum Hourly Throughput (tires/hr)*	Rubber Extruded (lbs/tire)	Maximum Material Removed (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	Uncontrolled PM/PM10/PM2.5 Emission Factor (lb/lb rubber extruded)	Uncontrolled PM/PM10/PM2.5 Potential to Emit (tons/ year)
Potential	14.4	3.5	50.4	441504.00	7.77E-09	<b>1.72E-06</b>

PM emissions (tons / yr) = rims coated / day \* lbs coating / rim \* lbs PM / lbs coating  
 \* (1-%transfer efficiency) \* (1-control efficiency) \* 365 days / yr \* 1 ton / 2000 lbs  
 Compliance with 6-1-2(a) = hourly controlled emission rate x 7000 grain/lb x hr/60 min x min/air flow rate

**Tread Extruder**

	Maximum Hourly Throughput (tires/hr)*	Rubber Extruded (lbs/tire)	Maximum Material Removed (lbs/hr)	Maximum Rubber Extruded (lbs/yr)	Uncontrolled PM/PM10/PM2.5 Emission Factor (lb/lb rubber extruded)	Uncontrolled PM/PM10/PM2.5 Potential to Emit (tons/ year)
Potential	3.2	25	80	700800.00	7.77E-09	<b>2.72E-06</b>

PM emissions (tons / yr) = rims coated / day \* lbs coating / rim \* lbs PM / lbs coating  
 \* (1-%transfer efficiency) \* (1-control efficiency) \* 365 days / yr \* 1 ton / 2000 lbs  
 Compliance with 6-1-2(a) = hourly controlled emission rate x 7000 grain/lb x hr/60 min x min/air flow rate

**Appendix A: Emissions Calculations  
PM/PM10/PM2.5, VOC and HAP Emissions  
Extruders**

**Company Name: Wingfoot Commercial Tire Systems, LLC  
Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
Permit Number: E097-29280-00320  
Reviewer: Marcia Earl  
Date: June 2010**

Maximum Production Rate  tires per hour  
Tread Rubber onto each tire  lbs/per tire  
Maximum Amount of Rubber on Tires  lbs/per hour  
Maximum Amount of Rubber on Tires  lbs/per year

Maximum Production Rate  tires per hour  
Tread Rubber onto each tire  lbs/per tire  
Maximum Amount of Rubber on Tires  lbs/per hour  
Maximum Amount of Rubber on Tires  lbs/per year

**Cushion Extruder**

Analyte Name	CAS #	Cmpd #6 lb/lb rubber	Emission (lbs/year)	VOC and HAPs Potential to Emit (tons/year)
<b>Total VOC</b>		1.23E-05	5.42	2.71E-03
<b>Total Speciated Organics</b>		9.04E-05	39.91	2.00E-02
<b>Total Particulate Matter</b>		7.77E-09	3.43E-03	1.72E-06
<b>Total Organic HAPs</b>		3.51E-05	15.50	7.75E-03
<b>Total Metal HAPs</b>		1.05E-07	0.05	2.32E-05
<b>Total HAPs</b>		3.52E-05	15.55	7.78E-03
1,1,1-Trichloroethane	71-55-6	9.37E-08	0.04	2.07E-05
1,3-Butadiene	106-99-0	5.06E-07	0.22	1.12E-04
2-Butanone	78-93-3	1.17E-07	0.05	2.59E-05
2-Chloroacetophenone	532-27-4	1.68E-09	7.43E-04	3.71E-07
4-Methyl-2-Pentanone	108-10-1	2.66E-06	1.17	5.87E-04
Acetonitrile	75-05-8	2.19E-07	0.10	4.84E-05
Acetophenone	98-86-2	3.32E-06	1.47	7.33E-04
Acrolein	107-02-8	3.10E-07	0.14	6.85E-05
Aniline	62-53-3	2.19E-07	0.10	4.83E-05
Benzene	71-43-2	2.69E-07	0.12	5.94E-05
Biphenyl	92-52-4	1.68E-08	0.01	3.71E-06
bis(2-Ethylhexyl)phthalate	117-81-7	1.13E-07	0.05	2.50E-05
Carbon Disulfide	75-15-0	2.66E-07	0.12	5.86E-05
Chloromethane	74-87-3	6.64E-08	0.03	1.47E-05
Chromium (Cr) Compounds		2.25E-08	0.01	4.97E-06
Cobalt (Co) Compounds		9.92E-09	0.00	2.19E-06
Cumene	98-82-8	1.36E-07	0.06	3.00E-05
Di-n-butylphthalate	84-74-2	1.98E-07	0.09	4.37E-05
Dibenzofuran	132-64-9	3.24E-09	1.43E-03	7.15E-07
Dimethylphthalate	131-11-3	4.27E-09	1.89E-03	9.43E-07
Ethylbenzene	100-41-4	8.10E-08	0.04	1.79E-05
Hexane	110-54-3	3.94E-07	0.17	8.70E-05
Isooctane	540-84-1	4.51E-08	0.02	9.97E-06
m-Xylene + p-Xylene		3.32E-07	0.15	7.34E-05
Methylene Chloride	75-09-2	1.32E-05	5.82	2.91E-03
Naphthalene	91-20-3	1.98E-07	0.09	4.37E-05
Nickel (Ni) Compounds		7.24E-08	0.03	1.60E-05
o-Toluidine	95-53-4	1.50E-07	0.07	3.30E-05
o-Xylene	95-47-6	2.58E-07	0.11	5.70E-05
Phenol	108-95-2	1.84E-07	0.08	4.05E-05
Propylene Oxide	75-56-9	1.75E-06	0.77	3.87E-04
Styrene	100-42-5	7.25E-07	0.32	1.60E-04
Tetrachloroethene	127-18-4	4.44E-08	0.02	9.79E-06
Toluene	108-88-3	9.26E-06	4.09	2.04E-03
<b>Total HAPs</b>			<b>7.77E-03</b>	

**Tread Extruder**

Analyte Name	CAS #	Cmpd #6 lb/lb rubber	Emission (lbs/year)	VOC and HAPs Potential to Emit (tons/year)
<b>Total VOC</b>		1.23E-05	8.61	4.31E-03
<b>Total Speciated Organics</b>		9.04E-05	63.34	3.17E-02
<b>Total Particulate Matter</b>		7.77E-09	0.01	2.72E-06
<b>Total Organic HAPs</b>		3.51E-05	24.61	1.23E-02
<b>Total Metal HAPs</b>		1.05E-07	0.07	3.68E-05
<b>Total HAPs</b>		3.52E-05	24.68	1.23E-02
1,1,1-Trichloroethane	71-55-6	9.37E-08	0.07	3.28E-05
1,3-Butadiene	106-99-0	5.06E-07	0.35	1.77E-04
2-Butanone	78-93-3	1.17E-07	0.08	4.10E-05
2-Chloroacetophenone	532-27-4	1.68E-09	0.00	5.89E-07
4-Methyl-2-Pentanone	108-10-1	2.66E-06	1.86	9.32E-04
Acetonitrile	75-05-8	2.19E-07	0.15	7.68E-05
Acetophenone	98-86-2	3.32E-06	2.33	1.16E-03
Acrolein	107-02-8	3.10E-07	0.22	1.09E-04
Aniline	62-53-3	2.19E-07	0.15	7.67E-05
Benzene	71-43-2	2.69E-07	0.19	9.42E-05
Biphenyl	92-52-4	1.68E-08	0.01	5.89E-06
bis(2-Ethylhexyl)phthalate	117-81-7	1.13E-07	0.08	3.97E-05
Carbon Disulfide	75-15-0	2.66E-07	0.19	9.31E-05
Chloromethane	74-87-3	6.64E-08	0.05	2.33E-05
Chromium (Cr) Compounds		2.25E-08	0.02	7.89E-06
Cobalt (Co) Compounds		9.92E-09	0.01	3.48E-06
Cumene	98-82-8	1.36E-07	0.10	4.76E-05
Di-n-butylphthalate	84-74-2	1.98E-07	0.14	6.94E-05
Dibenzofuran	132-64-9	3.24E-09	0.00	1.13E-06
Dimethylphthalate	131-11-3	4.27E-09	0.00	1.50E-06
Ethylbenzene	100-41-4	8.10E-08	0.06	2.84E-05
Hexane	110-54-3	3.94E-07	0.28	1.38E-04
Isooctane	540-84-1	4.51E-08	0.03	1.58E-05
m-Xylene + p-Xylene		3.32E-07	0.23	1.16E-04
Methylene Chloride	75-09-2	1.32E-05	9.23	4.62E-03
Naphthalene	91-20-3	1.98E-07	0.14	6.94E-05
Nickel (Ni) Compounds		7.24E-08	0.05	2.54E-05
o-Toluidine	95-53-4	1.50E-07	0.10	5.24E-05
o-Xylene	95-47-6	2.58E-07	0.18	9.04E-05
Phenol	108-95-2	1.84E-07	0.13	6.43E-05
Propylene Oxide	75-56-9	1.75E-06	1.23	6.14E-04
Styrene	100-42-5	7.25E-07	0.51	2.54E-04
Tetrachloroethene	127-18-4	4.44E-08	0.03	1.55E-05
Toluene	108-88-3	9.26E-06	6.49	3.24E-03
<b>Total HAPs</b>			<b>1.23E-02</b>	

**Appendix A: Emissions Calculations**  
**VOC Emissions**  
**Curing Chamber/Mold Cure Process**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

**Curing Chamber**

<b>VOC</b>	<b>Tires Cured (tires/hr)</b>	<b>Uncured rubber material per tire (lbs)</b>	<b>VOC emissions factor<sup>1</sup> (lb/lb)</b>	<b>VOC emissions (tons/ year)</b>
Potential	7.67	3.50	1.23E-04	0.01

2 curing chambers **Total 0.03**

VOC emissions (tons /yr) = tires cured(tires/hour) \* Uncured rubber material per tire (lbs) \* VOC emissions factor (lb/lb)  
 \* 8760 / 1 tons/2000 lbs.

<sup>1</sup> Emissions factors developed by the Rubber Manufacturers Association and published in Chapter 4.12 of AP-42.

**Mold Cure Process**

<b>VOC</b>	<b>Tires Cured (tires/hr)</b>	<b>Uncured rubber material per tire (lbs)</b>	<b>VOC emissions factor<sup>1</sup> (lb / lb)</b>	<b>VOC emissions (tons/ year)</b>
Potential	1	3.50	1.18E-02	0.18

4 Mold Cure Processes **Total 0.72**

VOC emissions (tons /yr) = tires cured(tires/hour) \* Uncured rubber material per tire (lbs) \* VOC emissions factor (lb/lb)  
 \* 8760 / 1 tons/2000 lbs.

<sup>1</sup> Emissions factors developed by the Rubber Manufacturers Association and published in Chapter 4.12 of AP-42.

**Appendix A: Emissions Calculations  
HAPs Emissions  
Curing Chamber**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

Maximum Capacity  tires per hour  
 Rubber Weight  lbs/per tire  
 Maximum Amount of Rubber  lbs/per hour  
 Maximum Amount of Rubber  lbs/per year

CAS #	OEM 205/70 lb/lb rubber	High Performance 205/70 lb/lb rubber	OEM 195/75 lb/lb rubber	Replacement 195/75 lb/lb rubber	Max Emission Factor lb/lb rubber	Curing Calculated Emissions (lbs/yr)	Curing Calculated Emissions (tons/yr)
	1.80E-04	2.11E-04	3.10E-04	1.94E-04	8.95E-04	1503.80	0.75
	2.04E-04	2.13E-04	1.46E-04	1.35E-04	6.98E-04	1172.10	0.59
	8.59E-05	1.06E-04	8.53E-05	5.43E-05	3.31E-04	556.78	2.78E-01
	8.59E-05	1.06E-04	8.53E-05	5.43E-05	3.31E-04	556.78	0.28
71-55-6	1.19E-07	2.41E-07	3.96E-08	9.27E-08	4.93E-07	0.83	4.14E-04
79-34-5			1.03E-07		1.03E-07	0.17	8.65E-05
75-34-3	7.96E-08				7.96E-08	0.13	6.68E-05
75-35-4	5.85E-07				5.85E-07	0.98	4.92E-04
120-82-1				2.59E-09	2.59E-09	4.35E-03	2.18E-06
96-12-8			2.06E-07		2.06E-07	0.35	1.73E-04
106-46-7	6.79E-07	1.89E-09	2.49E-09	6.80E-09	6.90E-07	1.16	5.80E-04
78-93-3	1.55E-06	1.10E-06	6.35E-07	5.37E-07	3.82E-06	6.41	3.21E-03
532-27-4		1.28E-09			1.28E-09	2.15E-03	1.08E-06
95-48-7		9.00E-09	5.42E-09	6.63E-09	2.11E-08	3.54E-02	1.77E-05
108-10-1	9.60E-06	1.29E-05	1.32E-05	1.26E-05	4.83E-05	81.13	4.06E-02
98-86-2	1.08E-07	1.07E-07	1.04E-07	1.20E-07	4.39E-07	0.74	3.69E-04
107-02-8				1.28E-07	1.28E-07	0.22	1.08E-04
62-53-3	4.36E-06	5.29E-07	3.73E-06	3.57E-06	1.22E-05	20.47	1.02E-02
71-43-2	3.51E-07	4.78E-07	2.01E-07	2.41E-07	1.27E-06	2.14	1.07E-03
100-44-7	4.42E-08				4.42E-08	0.07	3.71E-05
92-52-4		5.41E-08	6.78E-08	3.97E-08	1.62E-07	0.27	1.36E-04
117-81-7		7.00E-09	6.89E-08	5.92E-07	6.68E-07	1.12	5.61E-04
74-83-9			9.15E-08		9.15E-08	0.15	7.68E-05
75-15-0	4.92E-07	6.86E-06	1.32E-05	4.60E-06	2.52E-05	42.25	2.11E-02
463-58-1			5.44E-07		5.44E-07	0.91	4.57E-04
67-66-3		2.17E-08			2.17E-08	0.04	1.82E-05
74-87-3	4.92E-08	6.49E-08	9.25E-08	4.70E-08	2.54E-07	0.43	2.13E-04
98-82-8		4.75E-07	2.28E-07	1.36E-07	8.39E-07	1.41	7.05E-04
84-74-2	9.49E-07	2.88E-07	1.97E-07	4.52E-07	1.89E-06	3.17	1.58E-03
132-64-9		5.84E-09	9.11E-09	9.81E-09	2.48E-08	0.04	2.08E-05
131-11-3	4.06E-09	9.60E-08	7.36E-09	2.09E-08	1.28E-07	0.22	1.08E-04
100-41-4	1.03E-05	1.35E-05	8.55E-06	3.70E-06	3.61E-05	60.55	3.03E-02
110-54-3	3.04E-06	5.97E-06	6.62E-07	1.58E-06	1.13E-05	18.91	9.45E-03
78-59-1	4.37E-09	2.06E-08	4.54E-09	7.62E-09	3.71E-08	0.06	3.12E-05
	2.34E-05	3.36E-05	2.27E-05	1.26E-05	9.23E-05	155.06	0.08
75-09-2	5.62E-06	2.87E-06	4.21E-06	2.18E-06	1.49E-05	24.99	1.25E-02
91-20-3		2.01E-07	1.76E-07	1.24E-07	5.01E-07	0.84	4.21E-04
95-53-4	7.21E-09	5.45E-08	9.12E-08	1.01E-07	2.54E-07	0.43	2.13E-04
95-47-6	7.73E-06	8.74E-06	6.09E-06	3.06E-06	2.56E-05	43.03	2.15E-02
108-95-2	1.30E-07	4.64E-07	3.89E-08	3.87E-07	1.02E-06	1.71	8.57E-04
100-42-5	3.98E-06	6.83E-07	3.39E-07	4.71E-07	5.47E-06	9.19	4.60E-03
1634-04-4	3.04E-07				3.04E-07	0.51	2.56E-04
127-18-4	2.13E-07	9.56E-08	3.83E-08		3.47E-07	0.58	2.91E-04
108-88-3	1.22E-05	1.65E-05	9.47E-06	6.88E-06	4.50E-05	75.63	0.04
79-01-6				3.68E-08	3.68E-08	0.06	3.09E-05

**TOTAL HAPS (tons/year) 2.17**

1,1,1-Trichloroethane for Tire OEM 205/70 is average from the other tires tested due to suspected mold release presence not normally used.

**Appendix A: Emissions Calculations**  
**HAPs Emissions**  
**Mold Cure**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

Maximum Capacity  tires per hour

Rubber Weight  lbs/per tire

Maximum Amount of Rubber on T  lbs/per hour

Maximum Amount of Rubber on T  lbs/per year

CAS #	OEM 205/70 lb/lb rubber	High Performance 205/70 lb/lb rubber	OEM 195/75 lb/lb rubber	Replacement 195/75 lb/lb rubber	Max Emission Factor lb/lb rubber	Curing Calculated Emissions (lbs/yr)	Curing Calculated Emissions (tons/yr)
	1.80E-04	2.11E-04	3.10E-04	1.94E-04	8.95E-04	223.51	0.11
	2.04E-04	2.13E-04	1.46E-04	1.35E-04	6.98E-04	174.21	0.09
	8.59E-05	1.06E-04	8.53E-05	5.43E-05	3.31E-04	82.75	4.14E-02
	8.59E-05	1.06E-04	8.53E-05	5.43E-05	3.31E-04	82.75	0.04
71-55-6	1.19E-07	2.41E-07	3.96E-08	9.27E-08	4.93E-07	0.12	6.15E-05
79-34-5			1.03E-07		1.03E-07	0.03	1.29E-05
75-34-3	7.96E-08				7.96E-08	0.02	9.94E-06
75-35-4	5.85E-07				5.85E-07	0.15	7.31E-05
120-82-1				2.59E-09	2.59E-09	6.47E-04	3.23E-07
96-12-8			2.06E-07		2.06E-07	0.05	2.57E-05
106-46-7	6.79E-07	1.89E-09	2.49E-09	6.80E-09	6.90E-07	0.17	8.61E-05
78-93-3	1.55E-06	1.10E-06	6.35E-07	5.37E-07	3.82E-06	0.95	4.76E-04
532-27-4		1.28E-09			1.28E-09	3.20E-04	1.60E-07
95-48-7		9.00E-09	5.42E-09	6.63E-09	2.11E-08	5.26E-03	2.63E-06
108-10-1	9.60E-06	1.29E-05	1.32E-05	1.26E-05	4.83E-05	12.06	6.03E-03
98-86-2	1.08E-07	1.07E-07	1.04E-07	1.20E-07	4.39E-07	0.11	5.48E-05
107-02-8				1.28E-07	1.28E-07	0.03	1.60E-05
62-53-3	4.36E-06	5.29E-07	3.73E-06	3.57E-06	1.22E-05	3.04	1.52E-03
71-43-2	3.51E-07	4.78E-07	2.01E-07	2.41E-07	1.27E-06	0.32	1.59E-04
100-44-7	4.42E-08				4.42E-08	0.01	5.52E-06
92-52-4		5.41E-08	6.78E-08	3.97E-08	1.62E-07	0.04	2.02E-05
117-81-7		7.00E-09	6.89E-08	5.92E-07	6.68E-07	0.17	8.34E-05
74-83-9			9.15E-08		9.15E-08	0.02	1.14E-05
75-15-0	4.92E-07	6.86E-06	1.32E-05	4.60E-06	2.52E-05	6.28	3.14E-03
463-58-1			5.44E-07		5.44E-07	0.14	6.79E-05
67-66-3		2.17E-08			2.17E-08	0.01	2.71E-06
74-87-3	4.92E-08	6.49E-08	9.25E-08	4.70E-08	2.54E-07	0.06	3.17E-05
98-82-8		4.75E-07	2.28E-07	1.36E-07	8.39E-07	0.21	1.05E-04
84-74-2	9.49E-07	2.88E-07	1.97E-07	4.52E-07	1.89E-06	0.47	2.35E-04
132-64-9		5.84E-09	9.11E-09	9.81E-09	2.48E-08	0.01	3.09E-06
131-11-3	4.06E-09	9.60E-08	7.36E-09	2.09E-08	1.28E-07	0.03	1.60E-05
100-41-4	1.03E-05	1.35E-05	8.55E-06	3.70E-06	3.61E-05	9.00	4.50E-03
110-54-3	3.04E-06	5.97E-06	6.62E-07	1.58E-06	1.13E-05	2.81	1.40E-03
78-59-1	4.37E-09	2.06E-08	4.54E-09	7.62E-09	3.71E-08	0.01	4.63E-06
	2.34E-05	3.36E-05	2.27E-05	1.26E-05	9.23E-05	23.05	0.01
75-09-2	5.62E-06	2.87E-06	4.21E-06	2.18E-06	1.49E-05	3.71	1.86E-03
91-20-3		2.01E-07	1.76E-07	1.24E-07	5.01E-07	0.13	6.25E-05
95-53-4	7.21E-09	5.45E-08	9.12E-08	1.01E-07	2.54E-07	0.06	3.17E-05
95-47-6	7.73E-06	8.74E-06	6.09E-06	3.06E-06	2.56E-05	6.40	3.20E-03
108-95-2	1.30E-07	4.64E-07	3.89E-08	3.87E-07	1.02E-06	0.25	1.27E-04
100-42-5	3.98E-06	6.83E-07	3.39E-07	4.71E-07	5.47E-06	1.37	6.83E-04
1634-04-4	3.04E-07				3.04E-07	0.08	3.80E-05
127-18-4	2.13E-07	9.56E-08	3.83E-08		3.47E-07	0.09	4.33E-05
108-88-3	1.22E-05	1.65E-05	9.47E-06	6.88E-06	4.50E-05	11.24	0.01
79-01-6				3.68E-08	3.68E-08	0.01	4.59E-06

**TOTAL HAPS (tons/year) 0.32**

1,1,1-Trichloroethane for Tire OEM 205/70 is average from the other tires tested due to suspected mold release presence not normally used.

**Appendix A: Emissions Calculations  
VOC and Particulate  
From Surface Coating Operations**

**Company Name: Wingfoot Commercial Tire Systems, LLC  
Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
Permit Number: E097-29280-00320  
Reviewer: Marcia Earl  
Date: June 2010**

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
ATEC Black Tire Paint (water base)	8.34	0.00%	0.0%	0.0%	0.0%	0.00%	0.03880	0.500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%

**State Potential Emissions**

**Add worst case coating to all solvents**

**0.00    0.00    0.00    0.00**

**METHODOLOGY**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)  
Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)  
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)  
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)  
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)  
Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \*(8760 hrs/yr) \*(1 ton/2000 lbs)  
Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)  
Total = Worst Coating + Sum of all solvents used

**Appendix A: Emission Calculations**  
**HAP Emission Calculations**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Permit Reviewer:** Marcia Earl  
**Date:** June 2010

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Benzene	Weight % Hexane	Weight % Glycol Ethers	Weight % Methanol	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Benzene Emissions (ton/yr)	Hexane Emissions (ton/yr)	Glycol Ethers Emissions (ton/yr)	Methanol Emissions (ton/yr)
<b>Emission Unit 1</b>																	
A TEC Black Tire Paint	8.34	0.04000	0.500	20.00%	20.00%	0.00%	20.00%	0.00%	20.00%	0.00%	0.15	0.15	0.00	0.15	0.00	0.15	0.00
<b>METHODOLOGY</b>											0.15	0.15	0.15	0.15	0.00	0.15	0.00

Total State Potential Emissions

**Total HAPs 0.58**

**METHODOLOGY**

HAPS emission rate (tons/yr) = Density (lb/gal) \* Gal of Material (gal/unit) \* Maximum (unit/hr) \* Weight % HAP \* 8760 hrs/yr \* 1 ton/2000 lbs

**Appendix A: Emission Calculations  
VOC Emissions  
Tire Repair Areas**

**Company Name: Wingfoot Commercial Tire Systems, LLC  
Address City IN Zip: 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
Permit Number: E097-29280-00320  
Reviewer: Marcia Earl  
Date: June 2010**

Emission Unit Description	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC (tons/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Fiberbond Brush Type Cement	6.14	87.00%	0.00%	87.00%	0.00%	N/A	0.0017	0.50	5.34	5.34	0.00	0.11	0.02	0.00	0.00	100%
Rubber Solvent	5.80	100.00%	0.00%	100.00%	0.00%	N/A	0.0016	0.50	5.80	5.80	0.00	0.11	0.02	0.00	0.00	100%

**Potential Emissions (tons/yr)**

**0.01      0.22      0.04      0.00**

**METHODOLOGY**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) x Weight % Organics) / (1-Volume % water)  
Pounds of VOC per Gallon Coating = (Density (lb/gal) x Weight % Organics)  
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) x Gal of Material (gal/unit) x Maximum (units/hr)  
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) x Gal of Material (gal/unit) x Maximum (units/hr) x (24 hr/day)  
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) x Gal of Material (gal/unit) x Maximum (units/hr) x (8,760 hr/yr) x (1 ton/2,000 lbs)  
Particulate Potential Tons per Year = Maximum (units/hour) x Gal of Mat. (gal/unit) x Density (lbs/gal) x (1- Weight % Volatiles) x (1-Transfer efficiency %) x (8,760 hrs/yr) x (1 ton/2,000 lbs)

**Appendix A: Emissions Calculations**

**PM Emissions**

**Tire Repair**

**Company Name:** Wingfoot Commercial Tire Systems, LLC  
**Address City IN Zip:** 1950 W Edgewood Ave, Indianapolis, Indiana 46217  
**Permit Number:** E097-29280-00320  
**Reviewer:** Marcia Earl  
**Date:** June 2010

Emission Unit Description	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Heptane	Weight % Carbon Black	Heptane Emissions (tons/yr)	Carbon Black Emissions (tons/yr)
Fiberbond Brush Type Cement	6.14	0.0017	0.33	86.00%	5.00%	0.01	0.38
Rubber Solvent	5.80	0.0016	0.33	100.00%	0.00%	0.01	0.00

**Potential Emissions (tons/yr): Single HAP**

**0.03**                      **0.38**  
**Potential Emissions (tons/yr) Total HAPs**      **0.41**

**METHODOLOGY**

HAP emission rate (tons/yr) = Density (lb/gal) x Gallons of Material (gal/unit) x Maximum (unit/hr) x Weight % HAP x 8,760 hrs/yr x 1 ton/2,000 lbs



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
**Governor**

*Thomas W. Easterly*  
**Commissioner**

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

## **SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED**

**TO:** Scott Swinford  
Wingfoot Commercial Tire Systems, LLC  
1950 W. Edgewood Ave  
Indianapolis IN 46217

**DATE:** July 29, 2010

**FROM:** Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

**SUBJECT:** Final Decision  
Exemption  
097-29280-00320

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:  
Tom Allmon Env. Mgr. Wingfoot Commercial Tire Systems, LLC  
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at [jbrush@idem.IN.gov](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 11/30/07

# Mail Code 61-53

IDEM Staff	BMILLER 8/2/2010 Wingfoot Commercial Tire Systems, LLC 097-29280-00320 ( final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	 Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Scott Swinford Wingfoot Commercial Tire Systems, LLC 1950 W Edgewood Ave Indianapolis IN 46217 (Source CAATS) <b>Via Confirmed Delivery</b>										
2		Tom Allmon Environmental Mgr Wingfoot Commercial Tire Systems, LLC PO Box 48 Fort Smith AR 72902 (RO CAATS)										
3		Marion County Health Department 3838 N, Rural St Indianapolis IN 46205-2930 (Health Department)										
4		Mrs. Sandra Lee Watson 7834 E 100 S Marion IN 46953 (Affected Party)										
5		Indianapolis City Council and Mayors Office 200 East Washington Street, Room E Indianapolis IN 46204 (Local Official)										
6		Marion County Commissioners 200 E. Washington St. City County Bldg., Suite 801 Indianapolis IN 46204 (Local Official)										
7		Ms. Jodi Perras Improving Kids Environment 1111 East 54th Street, Suite 212 Indianapolis IN 46220 (Affected Party)										
8		Matt Mosier Office of Sustainability 2700 South Belmont Ave. Administration Bldg. Indianapolis IN 46221 (Local Official)										
9												
10												
11												
12												
13												
14												
15												

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