

January 5, 2016

Source ID No. 1770007

Curt Deitz
Environmental Manager
The Goodyear Tire & Rubber Company
P.O. Box 1069
Topeka, KS 66601

SUBJECT: Prevention of Significant Deterioration (PSD) Air Emission Source Construction Permit for the Mixer #1 Project

Dear Mr. Deitz:

The Kansas Department of Health and Environment (KDHE) reviewed The Goodyear Tire & Rubber Company's (Goodyear) proposal to make an operational change at their rubber tire manufacturing plant by permitting an existing mixer (Mixer #1) to mix rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions. As a result of coupling agent use in Mixer #1, a new regenerative thermal oxidizer (RTO) will be installed for the purpose of controlling emissions from the mixer when rubber compound formulations containing coupling agent are mixed at temperatures that would release ethanol emissions.

Enclosed is the PSD Air Emission Source Construction Permit for the proposed Mixer #1 project at Goodyear located in Topeka, Kansas. **Please review the permit carefully as it obligates Goodyear Topeka to certain requirements.**

Please notify the Air Program Field Staff, Pat Simpson, at the Northeast District Office in Lawrence at (785) 842-4600 within 30 days of completion of the proposed Mixer #1 project so that an evaluation can be conducted.

Performance testing, as applicable to the RTO in demonstrating initial and future compliance with Best Available Control Technology control requirements and emission limitations, shall be coordinated with the KDHE Bureau of Air, Compliance and Enforcement (AC&E) section in Topeka. Please contact Adam Irvin in the AC&E section at (785) 296-1578 at least 30 days prior to conducting performance tests, so arrangements may be made to have a representative of the department present.

Currently, Goodyear Topeka operates under a Class I Operating Permit renewed on August 12, 2009. In accordance with K.A.R. 28-19-510(f) (**K.A.R. 28-19-510, Class I operating permits; application timetable**), the owner or operator shall submit an application using the significant permit modification procedures as provided in K.A.R. 28-19-513(d) (**K.A.R. 28-19-513, Class I operating permits; permit amendment, modification or reopening and changes not requiring a permit action**) and the appropriate application fee as specified in K.A.R. 28-19-516 (**Class I operating permits; application fee**), if applicable, within one year of commencing operation of the proposed Mixer #1 project. Goodyear Topeka submitted an application in February 2014 for renewal of the Class I Operating Permit. If operation of the Mixer #1 project commences before issuance of the Class I Operating Permit renewal; in lieu of submitting an application as required by K.A.R. 28-19-510(f), Goodyear Topeka shall update and resubmit the renewal application, as necessary, to reflect the Mixer #1 project and associated requirements.

Page 2
Mr. Curt Deitz
January 5, 2016

As provided for in K.S.A. 65-3008b(e), an owner or operator may request a hearing within 15 days after affirmations, modification or reversal of a permit decision pursuant to subsection (b) of K.S.A. 65-3008a. In the Request for Hearing, the owner or operator shall specify the provision of this act or rule and regulation allegedly violated, the facts constituting the alleged violation and secretary's intended action. Such a request must be submitted to: Director, Office of Administrative Hearings, 1020 S. Kansas Avenue, Topeka, Kansas 66612-1327. Failure to submit a timely request shall result in a waiver of the right to a hearing.

Include source ID number 1770007 in all communications with the KDHE regarding this facility.

If you have any questions regarding this permit, please contact me at (785) 296-1693.

Sincerely,

A handwritten signature in black ink, appearing to read 'RSA', with a long horizontal stroke extending to the right.

Rasha S. Allen
Environmental Scientist
Air Permitting Section

RSA:saw
Enclosure
c: Ward Burns, EPA Region VII
Pat Simpson, NEDO
C-12686



AIR EMISSION SOURCE CONSTRUCTION PERMIT

Source ID No.: 1770007

Effective Date: January 5, 2016

Source Name: The Goodyear Tire & Rubber Company

SIC Code: 3011; Tires and Inner Tubes

NAICS Code: 326211; Tire Manufacturing (except Retreading)

Source Location: 2000 Northwest US Highway 24
Topeka, Kansas 66618

Mailing Address: P.O. Box 1069
Topeka, Kansas 66601

Contact Person: Curt Deitz
Environmental Manager
Telephone No. (785) 295-7466
curt_deitz@goodyear.com

This permit is issued pursuant to K.S.A. 65-3008 as amended.

I. Description of Activity Subject to Air Pollution Control Regulations

The Goodyear Tire & Rubber Company (Goodyear), located in Topeka, Kansas, operates a rubber tire manufacturing plant for the production of off-the-road and truck tires. The tire manufacturing process includes mixing, milling, extrusion, calendaring, tire building, and curing. Currently, Goodyear Topeka conducts rubber mixing in eleven mixers. Mixers are fed manually with raw materials, including carbon black, process oils, pigments, natural rubber, synthetic rubber, and specially-formulated coupling agents¹. Mixed batches are further blended through a series of steps and then processed into continuous slab rubber or small "pellets" of rubber.

¹ Coupling agent is a liquid or solid chemical additive mixed into a rubber compound for the purpose of enabling silica to become reinforcing filler in the rubber matrix.

Goodyear Topeka is proposing an operational change at their rubber tire manufacturing plant by permitting an existing mixer (Mixer #1) to mix rubber compound formulations containing coupling agent at temperatures that would release ethanol² emissions.^{3,4} The use of coupling agent enables Goodyear to meet the increasing demands of manufacturers and to meet the US Environmental Protection Agency Corporate Average Fuel Economy standards. As a result of coupling agent use in Mixer #1, a new regenerative thermal oxidizer (RTO) will be installed for the purpose of controlling emissions from the mixer when rubber compound formulations containing coupling agent are mixed at a temperature of 250°F or greater. Curing, which is an existing, downstream process, is affected by the operational change to Mixer #1.

Potential emissions of oxides of nitrogen (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter (PM), PM with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), volatile organic compounds (VOC), hazardous air pollutants (HAPs), and lead (Pb) were evaluated as part of the permit review process. The proposed project is subject to the provisions of **K.A.R. 28-19-300 (Construction permits and approvals; applicability)** because the increase in uncontrolled potential-to-emit⁵ of VOC, PM, and PM₁₀ exceeds the permit threshold levels as specified in K.A.R. 28-19-300(a)(1).

Additionally, Goodyear Topeka is considered an existing major stationary source under *40 CFR 52.21, Prevention of Significant Deterioration (PSD) of Air Quality*, as adopted by **K.A.R. 28-19-350**. Therefore, emissions of oxides of nitrogen (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), particulate matter (PM), PM with an aerodynamic diameter less than or equal to 10 micrometers (PM₁₀), PM with an aerodynamic diameter less than or equal to 2.5 micrometers (PM_{2.5}), ozone (O₃) which is regulated as volatile organic compounds (VOC) or NO_x (both pollutants are precursors to O₃ formation), lead (Pb), and greenhouse gas (GHG) as carbon dioxide equivalent (CO₂e) were evaluated as part of the permit review process using the calculation procedures specified in *40 CFR 52.21*.

The proposed project results in a significant emissions increase of PM, PM₁₀, and PM_{2.5} greater than 25 tons per year, 15 tons per year, and 10 tons per year, respectively. However, Goodyear Topeka is requesting that operational limitations be established in this permit to utilize the existing Mixer #1 dust collector for control of PM, PM₁₀, and PM_{2.5} emissions below the respective significant emission rates.

The proposed project does constitute a major modification under *40 CFR 52.21* as it results in a significant emissions increase of VOC greater than 40 tons per year. Pursuant to *40 CFR 52.21*, a significant emissions increase of VOC deems O₃ as significant. As a result, the proposed project is subject to Best Available Control Technology (BACT) for VOC which is considered BACT for O₃. BACT will be applied to existing Mixer #1 through application of the RTO and emission limitations. In addition to a BACT determination, an air quality analysis using a qualitative approach and an additional impacts analysis were performed as part of the permit review process.

² Ethanol is a volatile organic compound.

³ Goodyear Topeka was originally issued an Air Emission Source Construction Approval on October 17, 2011 (as referenced by C-9720) for replacement of existing Mixer #1 and associated dust collector and installation of a new carbon black handling system. Subsequently, the approval was revised on June 16, 2014 (as referenced by C-12253) clarifying operation of Mixer #1 and including requirements to ensure mixing of coupling agent would not release ethanol emissions. **As a result of the proposed operational change to Mixer #1, this permit supersedes any limitations/standards, compliance provisions, and recordkeeping/reporting requirements related to Mixer #1 and associated dust collector, as identified in the Air Emission Source Construction Approval issued on October 17, 2011 and revised on June 16, 2014.** Requirements associated with the carbon black handling system as identified in the approval remain in effect.

⁴ Given the large quantity of coupling agent anticipated to be used as part of the proposed project, Goodyear Topeka is conservatively estimating ethanol emissions are released when coupling agent is mixed at a temperature of 250°F or greater.

⁵ Potential-to-emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on a capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

Additionally, Mixer #1 is part of an existing tire production affected source subject to a federal regulation under *40 CFR Part 63*, as adopted by **K.A.R. 28-19-750 (Hazardous Air Pollutants; Maximum Achievable Control Technology)**.

II. Significant Applicable Air Pollution Control Regulations

The Mixer #1 project, as proposed, is subject to Kansas Administrative Regulations relating to air pollution control. The following state regulations were determined to be applicable to this project.

- A. K.A.R. 28-19-11, Exceptions Due to Breakdowns or Scheduled Maintenance (applicable to state regulation K.A.R. 28-19-650)
- B. K.A.R. 28-19-300, Construction Permits and Approvals; Applicability
- C. K.A.R. 28-19-302, Construction Permits and Approvals; Additional Provisions; Construction Permits
- D. K.A.R. 28-19-350, Prevention of Significant Deterioration of Air Quality
- E. K.A.R. 28-19-650, Emissions Opacity Limits
- F. K.A.R. 28-19-750 Hazardous Air Pollutants; Maximum Achievable Control Technology, which adopts by reference *40 CFR Part 63 Subpart A, General Provisions*, and *40 CFR Part 63 Subpart XXXX, National Emissions Standards for Hazardous Air Pollutants: Rubber Tire Manufacturing* [The rubber tire manufacturing plant is an existing source under this regulation. Mixer #1 is part of a tire production affected source subject to existing source requirements.]

III. Air Emission Unit Technical Specifications

The following equipment/operation/process, or equivalent, is approved:

A. Modified Equipment/Operation

One (1) existing, Kobelco Stewart Bolling, Inc., Model No. BB370 (370 Liter) mixer, designated as Mixer #1 (EU-MX01), will undergo an operational change by mixing rubber compound formulations containing coupling agent⁶ at high temperatures (rubber compound recipe temperatures > 300°F) and at low temperatures (rubber compound recipe temperatures between 250°F and 300°F)⁷. The mixer has a maximum throughput of 181,040,000 pounds of rubber per year (496,000 pounds of rubber per day) and will mix productive and non-productive rubber. Mixer #1 utilizes existing and will utilize new control equipment as follows:

- 1. One (1) existing, Siemens dust collector with an overall efficiency of 99% for PM/PM₁₀/PM_{2.5} emissions control (CE-MX01DC)

⁶ There are two types of coupling agent: liquid and solid.

⁷ Based on process information from Goodyear Topeka, ethanol emissions are not released when coupling agent is mixed at temperatures less than 250°F.

2. One (1) new regenerative thermal oxidizer (RTO) with a natural gas burner capacity of 5 MMBtu/hr and efficiencies of 98% destruction/removal⁸ and 84% capture⁹ for VOC emissions control (CE-MX1RTO)

Mixer #1 is subject to BACT for VOC.

B. Affected Process

Curing, an existing, downstream process, will handle the maximum rubber throughput for Mixer #1.

IV. Air Emissions Estimates from the Proposed Activity

Table 1 – Air Emissions Estimates

Pollutant	Project Emissions Increase (ton per year)		
	Pre-Permit Emissions (Uncontrolled)	Post-Permit Emissions (Controlled) ¹⁰	Post-Permit Emissions (BACT-Controlled) ¹¹
NO _x	2.15	--	--
SO ₂	0.01	--	--
CO	1.80	--	--
PM/PM ₁₀ /PM _{2.5}	36.37	0.52	--
VOC ¹²	Low T ¹³	637.89	510.78
	High T ¹⁴	877.14	353.84
Pb	1.07x10 ⁻⁵	--	--
Highest Individual HAP (CAS# 108-10-1) ¹⁵	4.04	--	--
Combined HAPs	11.64	--	--
GHG (CO ₂ e)	2,579	--	--

⁸ Goodyear Topeka is proposing an RTO with 98% destruction/removal efficiency (DRE) as VOC BACT for Mixer #1. The 98% DRE will be demonstrated through performance testing as required by conditions of this permit.

⁹ Goodyear Topeka is specifying an RTO with 84% capture efficiency. The 84% capture efficiency was demonstrated through site-specific testing at Goodyear Lawton Tire Plant located in Lawton, Oklahoma.

¹⁰ The emissions estimates of PM/PM₁₀/PM_{2.5} from Mixer #1 include operation of the dust collector as required by conditions of this permit.

¹¹ The emissions estimates of VOC from Mixer #1 include operation of the RTO (when mixing rubber compound formulations containing coupling agent at low and high temperatures as specified in Section III.A.) as required by BACT conditions of this permit. BACT for VOC is considered BACT for O₃.

¹² The emissions estimates from Mixer #1 assume 75% of VOC is emitted during mixing of coupling agent at high temperatures and 25% of VOC is emitted during mixing of coupling agent at low temperatures. The balance of VOC not emitted during mixing of coupling agent is emitted during the curing process.

¹³ The post-permit emissions estimates from Mixer #1 mixing coupling agent at low temperatures result in 27.28 tpy during mixing and 483.38 tpy during curing.

¹⁴ The post-permit emissions estimates from Mixer #1 mixing coupling agent at high temperatures result in 112.37 tpy during mixing and 241.35 tpy during curing.

¹⁵ CAS# 108-10-1 identifies a chemical substance having the following synonyms specific to the project: Methyl Isobutyl Ketone and 4-Methyl-2-Pentanone.

V. **Air Emission Limitations (General)**

Opacity of visible emissions from equipment/operation/process associated with the Mixer #1 project is limited by K.A.R. 28-19-650(a)(3) to 20 percent or less, except as provided in K.A.R. 28-19-11.

VI. **Permit Conditions**

This section contains specific conditions for the proposed Mixer #1 project which include operational and emission limitations, monitoring, compliance, performance testing, recordkeeping, and reporting requirements. If the conditions contained herein are not in exact agreement with the permit application or its revision, the conditions contained herein shall control.

Paragraph A. identifies regulatory requirements for affected sources. Paragraph B. identifies air pollution control requirements for the dust collector associated with Mixer #1. Paragraphs C. and D. identify VOC BACT requirements for Mixer #1, including a work practice standard, air pollution control requirements for the RTO, and emission limitations.

A. Mixer #1 is part of an existing tire production affected source subject to *40 CFR Part 63 Subpart XXXX, National Emissions Standards for Hazardous Air Pollutants: Rubber Tire Manufacturing*. The owner or operator shall continue to comply with the applicable requirements of *40 CFR Part 63 Subpart XXXX* related to emission limits (40 CFR 63.5984 and 40 CFR 63.5985), general and continuous compliance (40 CFR 63.5990, 40 CFR 63.6003, and 40 CFR 63.6004), recordkeeping (40 CFR 63.6011 and 40 CFR 63.6012), reporting (40 CFR 63.6010), and general provisions (40 CFR 63.6013).

B. The owner or operator shall comply with the following air pollution control requirements for the dust collector associated with Mixer #1, in accordance with K.A.R. 28-19-302(b):

1. Operational Limitations

The air pollution control equipment (dust collector, CE-MX01DC) shall be in place and continuously operating to control PM/ PM₁₀/PM_{2.5} emissions whenever Mixer #1 is in operation.

2. Monitoring and Recordkeeping Requirements

a. The dust collector shall be equipped with a monitoring device to continuously measure the pressure differential (or pressure drop) across the filter media in the dust collector when the mixer is in operation. The pressure drop monitoring device shall be installed, calibrated, operated, and maintained in accordance with manufacturer's specifications or recommendations. The pressure drop shall be recorded at least once every day. The owner or operator shall establish a normal pressure drop range based on manufacturer's specification or recommendation, operational history, and/or visual inspections that indicate proper operation of the dust collector. If a pressure drop reading is observed outside the established normal range, the owner or operator shall immediately inspect the dust collector to determine the cause and return the dust collector to normal operating conditions.

- b. A written maintenance plan to assure proper operation of the dust collector including the pressure drop monitoring device shall be developed, implemented, and maintained.
 - c. The owner or operator shall maintain a log showing the date of all routine or other maintenance, malfunction or repair of the dust collector including the pressure drop monitoring device, the nature of the action taken on such date, and any corrective action or preventative measures taken.
 - d. Records shall be maintained on-site for a period of five (5) years from the date of the record.
- C. The owner or operator shall comply with the following VOC BACT requirements associated with Mixer #1, including a work practice standard and air pollution control requirements for the RTO, in accordance with K.A.R. 28-19-302(a) and K.A.R. 28-19-350:

1. Operational Limitations

- a. The owner or operator shall employ good design and operation when mixing rubber compound formulations in Mixer #1 for minimizing VOC emissions. Compliance is established by the BACT analysis and emissions calculations submitted with the permit application.
- b. The air pollution control equipment (RTO, CE-MX1RTO) shall be in place and continuously operating to control VOC emissions whenever Mixer #1 is in operation and mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions (at low and high temperatures as specified in Section III.A.).
- c. The air pollution control equipment (RTO, CE-MX1RTO) shall achieve at least 98% destruction/removal efficiency (DRE) as demonstrated through performance testing.

2. Performance Testing Requirements

- a. Within 60 days after achieving the maximum production rate (including coupling agent use) at which Mixer #1 will be operated, but not later than 180 days of Mixer #1 mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions, the owner or operator shall conduct initial performance testing of the RTO to demonstrate compliance with the destruction/removal efficiency and determine the minimum combustion chamber temperature (established as the average combustion chamber temperature over the period of the test) at which the RTO operated during the successful performance test.
- b. The owner or operator shall conduct subsequent performance testing of the RTO every five (5) years following the initial successful performance test to verify performance of the RTO (\geq 98% DRE) and reestablish the minimum combustion chamber temperature.

- c. In conducting performance testing required by this permit, the reference test methods and procedures as specified in K.A.R. 28-19-212 shall be used to demonstrate compliance with the limitations set forth in this permit.
- d. Performance testing shall be conducted in accordance with a performance test protocol as approved by the KDHE. The owner or operator shall prepare and submit, at least 30 days prior to the date of the performance test(s), a performance test protocol identifying the proposed test methods and test schedule. The KDHE may elect to have an observer present at the facility during any performance testing required by this permit. After conducting the required performance testing, the owner or operator shall furnish the KDHE, within 30 days of the test(s), a written report of the performance testing results.
- e. For purposes of this permit, a *successful performance test* means a test completed in accordance with a performance test protocol as approved by the KDHE, and during which the limitations set forth in this permit were verified.

3. Monitoring and Recordkeeping Requirements

- a. The RTO shall be equipped with a monitoring device to continuously measure the temperature in the combustion chamber of the RTO when the mixer is in operation and mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions. The temperature monitoring device shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's specifications or recommendations. The combustion chamber temperature shall be recorded at least every 15 minutes. The RTO's combustion chamber temperature (same averaging period as during testing) shall be maintained at a temperature no lower than the minimum combustion chamber temperature established during the most recent, successful performance test. If the monitored temperature (same averaging period as during testing) deviates from the established minimum temperature, the owner or operator shall immediately inspect the RTO to determine the cause and return the RTO to satisfactory operating conditions.
- b. A written maintenance plan to assure proper operation of the RTO including the temperature monitoring device shall be developed, implemented, and maintained.
- c. The owner or operator shall maintain a log showing the date of all routine or other maintenance, malfunction or repair of the RTO including the temperature monitoring device, the nature of the action taken on such date, and any corrective action or preventative measures taken.
- d. Records, including performance testing results, shall be maintained on-site for a period of five (5) years from the date of the record.

4. Reporting Requirements

The owner or operator shall submit semi-annual reports detailing compliance with the BACT control requirements. After startup of the Mixer #1 project, reports shall be submitted by the end of the month following the end of each calendar half and shall include:

- a. The name and address of the facility;
- b. An identification of each emission unit included in the semi-annual report;
- c. Beginning and ending dates of the reporting period; and
- d. A summary of the records maintained for determining compliance with the operational limitations and monitoring and recordkeeping requirements under Section VI.C.

D. The owner or operator shall comply with the following VOC BACT emission limitation requirements for Mixer #1, in accordance with K.A.R. 28-19-302(a) and K.A.R. 28-19-350:

1. Emission Limitations

The VOC BACT emission limitations for Mixer #1 are as follows and summarized in Table 2:

- a. Emissions of VOC from mixing rubber compound formulations containing coupling agent (at low and high temperatures as specified in Section III.A.) shall not exceed 112.37 tons during each consecutive twelve (12) month period, as calculated post RTO control.
- b. Emissions of VOC from mixing rubber compound formulations containing coupling agent (at low and high temperatures as specified in Section III.A.) shall not exceed 2.48 lb per ton of rubber mixed, as calculated post RTO control.

Table 2 – VOC BACT Emission Limitations

Emission Unit	Pollutant	BACT Emission Limitation	
		Lb/Ton	Ton/Year
Mixer #1	VOC	2.48	112.37

2. Compliance Requirements

Compliance with the emission limitations shall be determined as follows:

- a. **The total monthly VOC emissions from mixing rubber compound formulations containing coupling agent shall be determined by adjusting the emissions routed to the RTO by the capture and destruction/removal efficiencies during the period that the calculation covers.** Expressed as a mathematical equation, the total monthly VOC emissions shall be determined by the owner or operator by use of the following or equivalent:

$$E_{\text{VOC}} = (E_{\text{Mixing}} + E_{\text{CA}}) \times [1 - (\text{CE} \times \text{DRE})]$$

Where;

E_{VOC} = total monthly VOC emissions from mixing rubber compound formulations containing coupling agent (tons)

E_{Mixing} = monthly VOC emissions from mixing rubber compounds¹⁶ (tons)

E_{CA} = monthly VOC emissions from coupling agent use¹⁷ (tons)

CE = RTO capture efficiency of 84% (expressed as a fraction) as demonstrated through site-specific testing at Goodyear Lawton Tire Plant located in Lawton, Oklahoma

DRE = RTO destruction/removal efficiency of 98% (expressed as a fraction) as demonstrated through performance testing

- b. **The monthly VOC emissions from mixing rubber compounds shall be determined by using the mixing emission factors developed by the Rubber Manufacturers Association (RMA) during the period that the calculation covers.** Expressed as a mathematical equation, the monthly VOC emissions shall be determined by the owner or operator by use of the following or equivalent:

$$E_{\text{Mixing}} = \left(\frac{1}{2000}\right) \sum_{c=1}^n (R_c)(EF_c)$$

Where;

E_{Mixing} = monthly VOC emissions from mixing rubber compounds (tons)

R_c = monthly amount of rubber compound c mixed (lb rubber)

EF_c = RMA mixing emission factor for rubber compound c (lb VOC per lb rubber)

c = rubber compound types

n = total number of rubber compound types

¹⁶ VOC emissions from mixing rubber compounds need to be quantified only when rubber compound formulations contain/use coupling agent.

¹⁷ VOC emissions from coupling agent use need to be quantified only when coupling agent is mixed at low and high temperatures as specified in Section III.A.

- c. **The monthly VOC emissions from coupling agent use shall be determined by totaling the weights of VOC in every coupling agent mixed at high temperatures¹⁸ (identified below as high temperature coupling agent) and at low temperatures¹⁹ (identified below as low temperature coupling agent) during the period that the calculation covers.** Expressed as a mathematical equation, the monthly VOC emissions shall be determined by the owner or operator by use of the following or equivalent:

$$E_{CA} = \left(\frac{1}{2000} \right) \left[\sum_{HTCA=1}^k (C_{HTCA})(X_{VOC HTCA})(0.75) + \sum_{LTCA=1}^p (C_{LTCA})(X_{VOC LTCA})(0.25) \right]$$

Where;

- E_{CA} = monthly VOC emissions from coupling agent use (tons)
 C_{HTCA} = monthly amount of high temperature coupling agent used (lb)
 $X_{VOC HTCA}$ = VOC in high temperature coupling agent (lb VOC per lb high temperature coupling agent)²⁰
 C_{LTCA} = monthly amount of low temperature coupling agent used (lb)
 $X_{VOC LTCA}$ = VOC in low temperature coupling agent (lb VOC per lb low temperature coupling agent)²¹
HTCA = high temperature coupling agent types
k = total number of high temperature coupling agent types
LTCA = low temperature coupling agent types
p = total number of low temperature coupling agent types

3. Recordkeeping Requirements

- a. The owner or operator shall maintain monthly records of VOC emissions from mixing rubber compounds and from coupling agent use. Records of VOC emissions shall be updated monthly, no later than the last day of the month following the month to which the records relate. Additionally, records shall specify the date the record was updated and the total VOC emitted during the month. Records shall identify each rubber compound formulation containing coupling agent and the respective mixing temperature. Records shall specify the type and amount of each rubber compound mixed during the month, including the total amount of rubber mixed during the month. Records shall specify the type and amount of each coupling agent used during the month.
- b. The owner or operator shall maintain annual records of VOC emissions for determining compliance with the VOC BACT emission limitations as specified in Section VI.D.1. Records of VOC emissions shall be updated no later than the last day of the month following the consecutive 12 month period.

¹⁸ Coupling agent is mixed at temperatures > 300°F (high) based on rubber compound formulations.

¹⁹ Coupling agent is mixed at temperatures between 250°F and 300°F (low) based on rubber compound formulations.

²⁰ Based on performance testing at Goodyear, high temperature liquid coupling agent is 0.388 and high temperature solid coupling agent is 0.194.

²¹ Based on performance testing at Goodyear, low temperature liquid coupling agent is 0.342 and low temperature solid coupling agent is 0.171.

- c. Records shall be maintained on-site for a period of five (5) years from the date of the record.

4. Reporting Requirements

The owner or operator shall submit semi-annual reports detailing compliance with the BACT emission limitations. The calculated emissions shall be expressed in the same units as the emission limitations. After startup of the Mixer #1 project, reports shall be submitted by the end of the month following the end of each calendar half and shall include:

- a. The name and address of the facility;
- b. An identification of each emission unit included in the semi-annual report;
- c. Beginning and ending dates of the reporting period;
- d. A summary of the records maintained for determining compliance with the emission limitations and recordkeeping requirements under Section VI.D.

VII. Notification

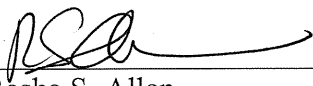
- A. Notify the Air Program Field Staff at the Northeast District Office in Lawrence at (785) 842-4600 within 30 days of completion of the proposed Mixer #1 project so that an evaluation can be conducted.
- B. The owner or operator must notify the KDHE by telephone, facsimile, or electronic mail transmission within two (2) working days following the discovery of any failure of air pollution control equipment, process equipment, or process to operate in a normal manner which results in an increase in emissions above any allowable operational or emission limitation as specified in Section VI. of the permit. In addition, the owner or operator must notify the KDHE in writing with ten (10) days of any such failure. The written notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section VI., and the methods utilized to mitigate emissions and restore normal operations.

VIII. General Provisions

- A. This document shall become void if the construction or modification has not commenced within 18 months of the effective date, or if the construction or modification is interrupted for a period of 18 months or longer.
- B. A construction permit or approval must be issued by KDHE prior to commencing any construction or modification of equipment or processes which results in potential-to-emit increases equal to or greater than the thresholds specified at K.A.R. 28-19-300.

- C. Upon presentation of credentials and other documents as may be required by law, representatives of the KDHE (including authorized contractors of the KDHE) shall be allowed to:
1. enter upon the premises where a regulated facility or activity is located or conducted or where records must be kept under conditions of this document;
 2. have access to and copy, at reasonable times, any records that must be kept under conditions of this document;
 3. inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this document; and
 4. sample or monitor, at reasonable times, for the purposes of assuring compliance with this document or as otherwise authorized by the Secretary of the KDHE, any substances or parameters at any location.
- D. The emission unit or stationary source which is the subject of this document shall be operated in compliance with all applicable requirements of the Kansas Air Quality Act and the federal Clean Air Act.
- E. This document is subject to periodic review and amendment as deemed necessary to fulfill the intent and purpose of the Kansas Air Quality Statutes and Regulations.
- F. This document does not relieve the permittee of the obligation to obtain any approvals, permits, licenses, or documents of sanction which may be required by other federal, state, or local agencies.

Permit Writer



Rasha S. Allen
Environmental Scientist
Air Permitting Section

1/5/16
Date Signed

RSA:saw
c: Pat Simpson, NEDO
C-12686