PREVENTION OF SIGNIFICANT DETERIORATION (PSD)
PERMIT SUMMARY SHEET

Permit Number: C-12686

Source ID Number: 1770007

Source Name: The Goodyear Tire & Rubber Company

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

I. Area Designation

K.A.R. 28-19-350, et seq., Prevention of Significant Deterioration (PSD) of Air Quality, affects new major stationary sources and major modifications of major stationary sources located in areas of the state designated as "attainment" or "unclassifiable" under section 107 of the Clean Air Act (CAA) for any criteria pollutant. Shawnee County, Kansas, where the proposed project as described below is occurring, is an attainment/unclassifiable area for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

II. Project Description

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, calendering, 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 agents[1]. 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 ethanol[2] 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.

III. <u>Significant Applicable Air Emission Regulations</u>

The Mixer #1 project, as proposed, is subject to Kansas Administrative Regulations relating to air pollution control. The application for this permit was reviewed, and the following 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 Standard for Hazardous Air Pollutants: Rubber Tire Manufacturing*

---

[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.

IV. Air Emissions from the Project

Goodyear Topeka has the potential-to-emit[5] of several PSD regulated pollutants exceeding 250 tons per year; and therefore, is considered to be a major stationary source under the provisions of *40 CFR 52.21*, as adopted by K.A.R. 28-19-350.

Emissions of oxides of nitrogen (NO_x), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM), PM with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), PM with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), ozone (O_3) which is regulated as volatile organic compounds (VOC) or NO_x (both pollutants are precursors to O_3 formation), hazardous air pollutants (HAPs), lead (Pb), and greenhouse gas (GHG) as carbon dioxide equivalent (CO_2e) were evaluated as part of the review process. For PSD regulated pollutants, emissions were evaluated using the calculation procedures specified in *40 CFR 52.21* and compared to the significant emission rates for applicability under the PSD regulations.

Emissions estimates from the project are shown in Table 1 and will occur as a result of an operational change to existing equipment (Mixer #1) and installation of air pollution control equipment (RTO). Specifically, emissions associated with Mixer #1 include mixing and curing, which were estimated using emission factors developed by the Rubber Manufacturers Association. Emissions resulting from coupling agent use were estimated using a mass balance approach incorporating process specific information such as rubber compound formulations, usage rates, and operating scenarios. Emissions from the RTO were estimated using US EPA AP-42, Compilation of Air Pollutant Emission Factors. A detailed explanation of emissions estimates is provided in Section 3 of the permit application. Detailed emissions calculations for all pollutants are provided in Appendix B of the permit application.

The project results in a significant emissions increase of PM, PM_{10}, 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 the permit to utilize the existing Mixer #1 dust collector for control of PM, PM_{10}, and $PM_{2.5}$ emissions below their respective significant emission rates.

The project does result in a significant emissions increase of VOC greater than 40 tons per year (deeming O_3 as significant), which constitutes a major modification and review under the PSD regulations. The project is subject to various aspects of K.A.R. 28-19-350, such as the use of best available control technology, an air quality analysis, and an analysis of additional impacts, if any, upon soils, vegetation and visibility.

[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.

Table 1 - Air Emissions Estimates

Pollutant		Project Emissions Increase (ton per year)		
		Pre-Permit Emissions (Uncontrolled)	Post-Permit Emissions (Controlled)[6]	Post-Permit Emissions (BACT-Controlled)[7]
NO_x		2.15	--	--
SO_2		0.01	--	--
CO		1.80	--	--
$PM/PM_{10}/PM_{2.5}$		36.37	0.52	--
VOC[8]	Low T[9]	637.89	--	510.78
	High T[10]	877.14	--	353.84
Pb		1.07×10^{-5}	--	--
Highest Individual HAP (CAS# 108-10-1)[11]		4.04	--	--
Combined HAPs		11.64	--	--
GHG (CO_2e)		2,579	--	--

V. Best Available Control Technology (BACT)

BACT requirements apply to each individual new or modified affected emissions unit and pollutant emitting activity at which a net emissions increase would occur. Individual BACT determinations are performed for each pollutant subject to PSD review emitted from the same emission unit. Consequently, the BACT determination must separately address, for each regulated pollutant with a significant emissions increase at the source, air pollution controls for each emissions unit or pollutant emitting activity subject to review. Goodyear Topeka was required to conduct a BACT analysis for the Kansas Department of Health and Environment’s (KDHE) review according to the process described in Attachment A of this permit summary. The KDHE's evaluation of VOC BACT for Mixer #1 is presented in Attachment B.

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

7 The emissions estimates of VOC from Mixer #1 include operation of the RTO [when mixing rubber compound formulations containing coupling agent at low temperatures (rubber compound recipe temperatures between 250°F and 300°F) and high temperatures (rubber compound recipe temperatures > 300°F)] as required by BACT conditions of the permit. BACT for VOC is considered BACT for O_3.

8 The emissions estimates of VOC 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.

9 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.

10 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.

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

The KDHE concurred with Goodyear Topeka's VOC BACT analysis, and required the following operational and emission limitations for Mixer #1 in the permit:

A. BACT is determined to be continuous operation of the RTO 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[12] and high[13] temperatures). The RTO is required to achieve at least 98% destruction/removal efficiency as demonstrated through a performance test conducted initially and every five years thereafter. The RTO was specified to have a capture efficiency of 84% which was demonstrated through site-specific testing at Goodyear Lawton Tire Plant located in Lawton, Oklahoma.

B. BACT is determined to be good design and operation when mixing rubber compound formulations in Mixer #1 for minimizing VOC emissions. Uncontrolled (without RTO control) VOC emissions from mixing rubber compound formulations are approximately 0.6% of mixing rubber compound formulations containing coupling agent at high temperatures and 2.3% of mixing rubber compound formulations containing coupling agent at low temperatures. Compliance is established by the BACT analysis and emissions calculations submitted with the permit application.

C. BACT emissions from mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions shall not exceed 112.37 tons VOC during each consecutive twelve month period and 2.48 lb VOC per ton of rubber mixed, as calculated post RTO control. Required records include rubber compound formulations containing coupling agent and the respective mixing temperature, type and amount of rubber compounds mixed, and type and amount of coupling agents used in order to calculate monthly and annual VOC emissions for comparison with the emission limitations.

VI. Ambient Air Impact Analysis

The owner or operator of a proposed source or modification must demonstrate that allowable emission increases from the proposed source, in conjunction with all other applicable emissions increases or reductions, would not cause or contribute to air pollution in violation of any national ambient air quality standard (NAAQS) in any air quality control region; or any applicable maximum allowable increase over the baseline concentration in any area.

A. Emissions Impacts

The proposed project has a significant increase in VOC emissions only. No model is currently approved by EPA to predict ground level concentrations for VOC. VOC is a precursor of ozone, which does have a NAAQS. The owner or operator must demonstrate that the proposed increase in VOC will not cause or contribute to an exceedance of the ozone NAAQS.

[12] Coupling agent is mixed at low temperatures between 250°F and 300°F. Ethanol emissions are not released at temperatures less than 250°F.

[13] Coupling agent is mixed at high temperatures > 300°F.

EPA has not established a 1-hour Class II maximum allowable increment for VOC or ozone. Therefore, no calculation of the potential consumption of such increment is possible.

In order to consider NAAQS impacts, data from an existing air quality monitor located at 2501 Randolph Avenue, at Kansas Neurological Institute (KNI) in Topeka was considered. For the years 2008-2014, KDHE analyzed days during which the maximum ozone 8-hour averaging period exceeded 0.067 parts per million (ppm) at the KNI monitor. The red lines are back trajectory clusters, created for days that exceeded 0.067 ppm. These days are not indicative of exceedances; the current ozone standard is 0.075 ppm. A total of 61 days during the seven year period had measured ozone concentrations exceeding 0.067 ppm. These back trajectories show the direction from which the wind came on days with ozone readings that are higher than 0.067 ppm. Figure 1 shows the back trajectory clusters overlaid on a map of the Topeka area and locations of the existing Goodyear plant (yellow push pin) and the air quality monitor (center of the back trajectory clusters). The back trajectories show that during the seven year period examined, higher ozone concentrations originate predominantly from sources other than Goodyear, located south and east of the monitor. Figure 2 shows the same data, with a larger total coverage area.

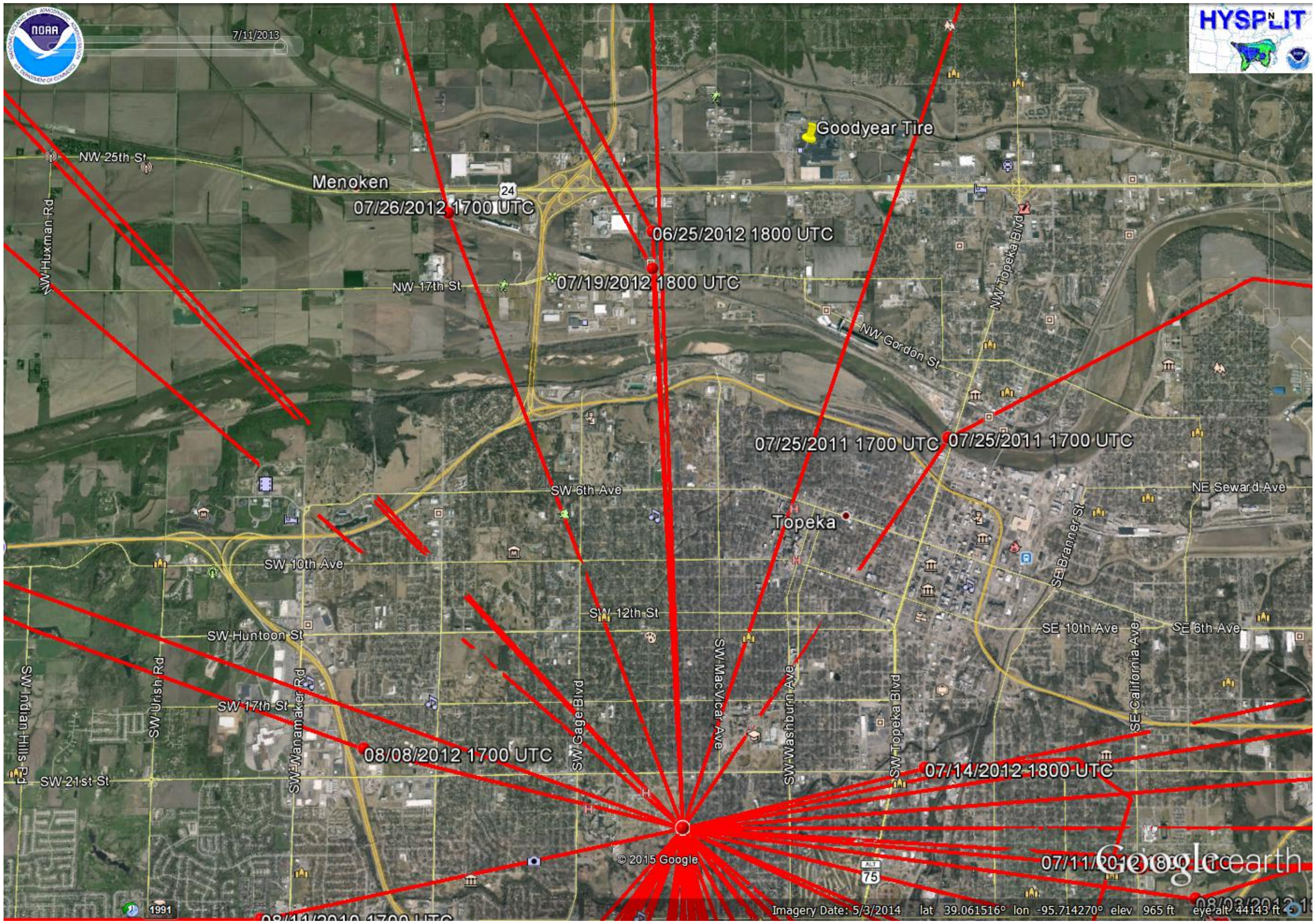

Figure 1. Back Trajectory Clusters for Topeka Area 2008-2014, Indicating Wind Direction for Days with Ozone > 0.067 ppm

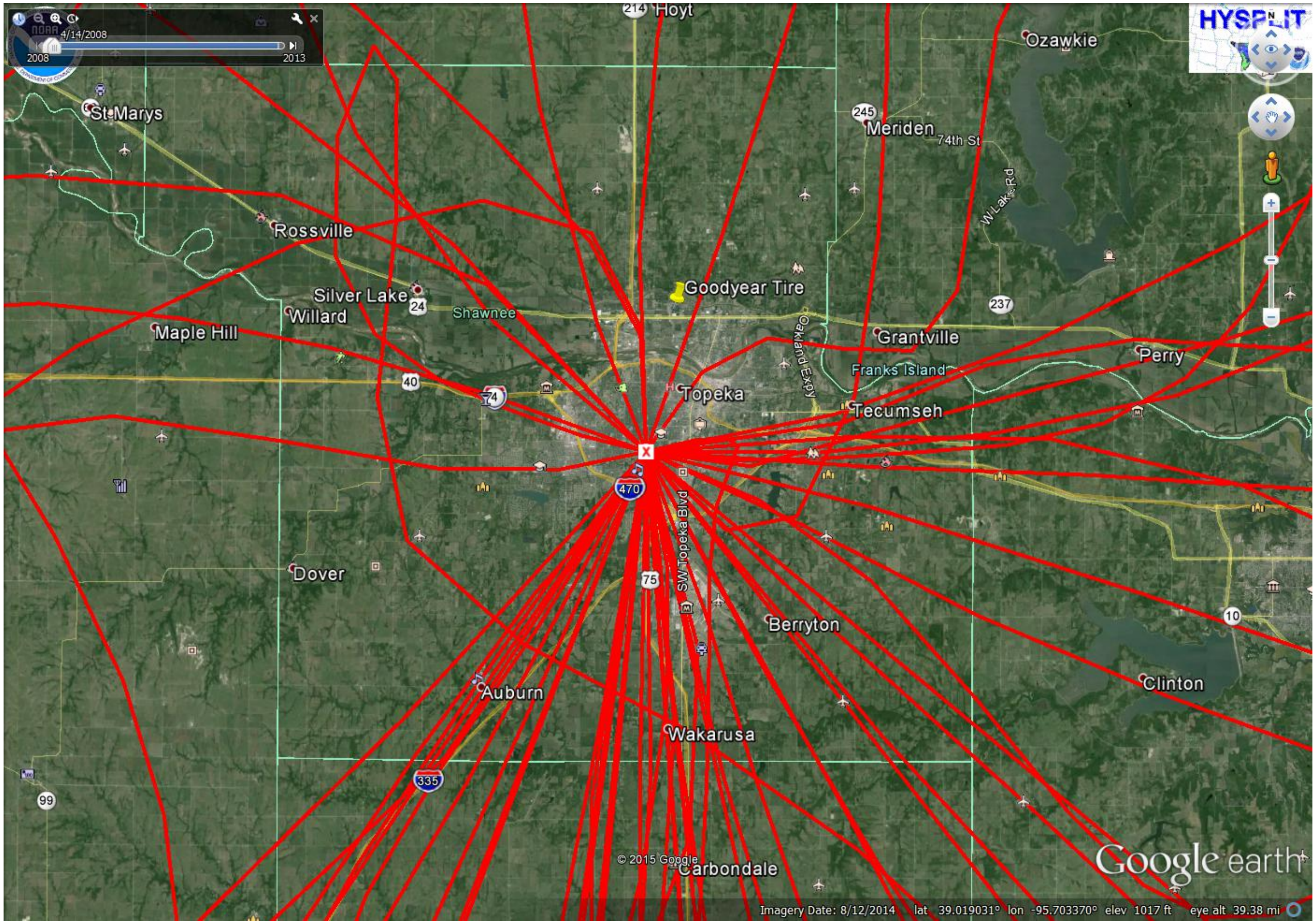

Figure 2. Back Trajectory Clusters for Topeka Area 2008-2014, Indicating Wind Direction for Days with Ozone > 0.067 ppm (same as Figure 1, with increased geographical area coverage)

The most recent 3-year ozone design value for the monitor located in Shawnee County for the years 2012-2014 is 0.069 ppm. The current total VOC emissions inventory for the Shawnee County metropolitan statistical area (MSA) is 36,027 tons per year, based on nonpoint, nonroad, onroad, and point source emissions, as reported in the 2011 Environmental Protection Agency (EPA) National Emissions Inventory. Please refer to Table 2 for detailed information. The Shawnee County MSA includes Jackson, Jefferson, Osage, Shawnee, and Wabaunsee Counties. This inventory conservatively excludes VOC emissions from “events”, such as range land burning within the MSA. Goodyear is proposing to increase VOC emissions by 511 tons per year due to the project under consideration, which would account for an increase of 1.42% of the Shawnee County MSA. If a proportional increase in the monitor design value of 1.42% occurred, the projected design value would be 0.070 ppm, still within the NAAQS standard for ozone.

Table 2 - 2011 Emissions Topeka MSA

Sector	FIPS[14]	County	VOC (tons per year)
Event	20085	Jackson	919
Nonpoint	20085	Jackson	5,451
Nonroad	20085	Jackson	49
Onroad	20085	Jackson	170
Point	20085	Jackson	2
Event	20087	Jefferson	395
Nonpoint	20087	Jefferson	5,634
Nonroad	20087	Jefferson	439
Onroad	20087	Jefferson	220
Point	20087	Jefferson	13
Event	20139	Osage	5,722
Nonpoint	20139	Osage	5,828
Nonroad	20139	Osage	256
Onroad	20139	Osage	227
Point	20139	Osage	1
Event	20177	Shawnee	1,459
Nonpoint	20177	Shawnee	7,670
Nonroad	20177	Shawnee	499
Onroad	20177	Shawnee	1,447
Point	20177	Shawnee	975
Event	20197	Wabaunsee	13,140
Nonpoint	20197	Wabaunsee	6,918
Nonroad	20197	Wabaunsee	43

[14] Federal Information Processing Standard (FIPS) County Code

Table 2 - 2011 Emissions Topeka MSA

Sector	FIPS[14]	County	VOC (tons per year)
Onroad	20197	Wabaunsee	187
Point	20197	Wabaunsee	0
Total			**57,662**
Total Excluding Events			**36,027**

After considering data from back trajectories, and the proportional increase compared to the Shawnee County MSA total annual VOC emissions, KDHE has concluded that the proposed project will not will not cause or contribute to air pollution in violation of any NAAQS.

B. Preconstruction Monitoring

K.A.R. 28-19-350 adopts by reference portions of 40 CFR 52.21, including 52.21(m) and (i). 40 CFR 52.21(m) requires continuous air quality monitoring data gathered for purposes of determining whether emissions of that pollutant would cause or contribute to a violation of a NAAQS or increment. 40 CFR 52.21(i) contains levels below which KDHE may exempt the source from the requirement to conduct preconstruction monitoring. These levels are also known as significant monitoring concentrations, or SMCs. For ozone, preconstruction monitoring may be exempted if the proposed net emissions increase of VOC is less than 100 tons per year. The project exceeds the SMC for VOC, and therefore ozone. KDHE has approved the use of existing monitoring in the region to satisfy the requirement for preconstruction monitoring. Data from the existing air quality monitor located at 2501 Randolph Avenue, at KNI in Topeka is representative of ambient air quality data for ozone at the location of the proposed project.

VII. Ambient Air Impact Analysis

The facility was required to provide an analysis of the impairment to visibility, and impacts on soils and vegetation that would occur as a result of this project and to what extent the emissions from the proposed modification impacts the general commercial, residential, industrial and other growth. Refer to the application update received by KDHE on August 7, 2015 for more detailed information.

A. Visibility Impairment Analysis

Per EPA's Workbook for Plume Visual Impact Screening and Analysis (Revised; EPA-454/R-92-023; October 1992), sources of air pollution can cause visible plumes if emissions of particulates (including soot and primary sulfate) and nitrogen oxides are sufficiently large (p.1). The proposed project will not emit these pollutants in significant quantities. Therefore, no visibility impairment analysis was performed. The project is not expected to produce any perceptible visibility impacts in the immediate vicinity of the plant.

B. Impacts on Soil and Vegetation

The effects of gaseous air pollutants on vegetation can be classified into three categories: acute (e.g. 3 hours) from relatively high concentrations, chronic (months and years of exposure) from lower concentrations, and long-term (abnormal changes in ecosystems and subtle physiological alternations in organisms).

VOCs are a precursor to ozone, for which a NAAQS applies. Ozone can damage plants and decrease crop production. Some chemical species of VOC can impact soil and vegetation near the emission source. VOCs can interfere with the ability of plants to produce and store food, make the plants more susceptible to disease, insect damage, the synergistic effects of other pollutants, and weather related damage. Ethanol is the primary VOC associated with the proposed project. Ethanol is not a hazardous air pollutant. Byproducts of ethanol manufacturing are used as livestock feed. The proposed project is not expected to have a significant impact on soils or vegetation.

C. Growth in Commercial, Residential and Industrial activity

According to the application update received by KDHE on August 7, 2015, Goodyear does not expect to increase the number of employees in order to accommodate the increase in coupling agent usage and mixer upgrades. Any additional growth is expected to be minimal.

VIII. <u>Key Steps in the 'Top-Down' BACT Analysis</u>

The five steps in the "Top-Down" BACT Analysis are presented in Attachment A.

IX. <u>BACT Analysis for PSD Permit</u>

The KDHE's evaluation of Goodyear Topeka's proposed BACT for Mixer #1 is presented in Attachment B.

Attachment A

KEY STEPS IN THE "TOP-DOWN" BACT ANALYSIS

STEP 1: **IDENTIFY ALL POTENTIAL AVAILABLE CONTROL TECHNOLOGIES**.

The first step in a "Top-Down" analysis is to identify, for the emission unit in question, "all available" control options. Available control options are those air pollution control technologies or techniques with a PRACTICAL POTENTIAL FOR APPLICATION to the emissions unit and the regulated pollutant under review. This includes technologies employed outside of the United States. Air pollution control technologies and techniques include the application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of the affected pollutant.

STEP 2: **ELIMINATE TECHNICALLY INFEASIBLE OPTIONS**.

The technical feasibility of the control options identified in Step 1 is evaluated with respect to the source-specific (or emissions unit specific) factors. In general, a demonstration of technical infeasibility should be clearly documented and should show, based on physical, chemical, and engineering principles, that difficulties would preclude the successful use of the control option on the emissions unit under review. Technically infeasible control options are then eliminated from further consideration in the BACT analysis.

STEP 3: **RANK REMAINING CONTROL TECHNOLOGIES BY CONTROL EFFECTIVENESS.**

All remaining control alternatives not eliminated in Step 2 are ranked and then listed in order of over-all control effectiveness for the pollutant under review, with the most effective control alternative at the top. A list should be prepared for each pollutant and for each emissions unit subject to a BACT analysis.

The list should present the array of control technology alternatives and should include the following types of information:

1) control efficiencies;

2) expected emission rate;

3) expected emission reduction;

4) environmental impacts;

5) energy impacts; and

6) economic impacts.

STEP 4: **EVALUATE MOST EFFECTIVE CONTROLS AND DOCUMENT RESULTS**.

The applicant presents the analysis of the associated impacts of the control option in the listing. For each option, the applicant is responsible for presenting an objective evaluation of each impact. Both beneficial and adverse impacts should be discussed and, where possible, quantified. In general, the BACT analysis should focus on the direct impact of the control alternative. The applicant proceeds to consider whether impacts of unregulated air pollutants or impacts in other media would justify selection of an alternative control option. In the event the top candidate is shown to be inappropriate, due to energy, environmental, or economic impacts, the rationale for this finding should be fully documented for the public record. Then the next most stringent alternative in the listing becomes the new control candidate and is similarly evaluated. This process continues until the technology cannot be eliminated.

STEP 5: **SELECT BACT**.

The most effective control option not eliminated in Step 4 is proposed as BACT for the emission unit to control the pollutant under review.

Attachment B

THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT'S EVALUATION OF GOODYEAR TOPEKA PROPOSED BACT OPTIONS

Goodyear Topeka conducted a BACT analysis to determine the appropriate control of emissions from an operational change to an existing mixer (Mixer #1) to mix rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions. The BACT analysis is limited to VOC, as it is the only pollutant resulting in a significant emissions increase from the project. Curing, which is a downstream process, is affected by the operational change to Mixer #1. Curing is an existing process and is not being physically or operationally modified as part of the project. Therefore, a BACT analysis is not required for the curing process. Please refer to the BACT analysis in **Section 5** of the permit application for an explanation of the curing process including information on technical infeasible methods/options for capturing and controlling VOC emissions from the process.

The following represents the KDHE's evaluation of Goodyear Topeka's proposed VOC BACT supported by a summary of the analysis conducted for the control options. Please refer to the BACT analysis in **Section 5** of the permit application for a more detailed evaluation.

I. VOC BACT Analysis for Mixer #1

VOC emissions will result from mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions. Specifically, emissions are generated from mixing rubber compounds and coupling agent use. Three control technologies are identified as add-on control options and include Regenerative Thermal Oxidation (RTO), Regenerative Catalytic Oxidation (RCO), and Condensers. Good Design/Operation is identified as standard for the mixing process. The KDHE reviewed the EPA's RACT/BACT/LAER Clearinghouse and recently issued permits, and concurs that thermal oxidation and good design/operation are available control options for Mixer #1.

A. *Control Technologies:* All of the control technologies identified are considered technically feasible control options. Goodyear Topeka ranked these control technologies, for the pollutant VOC, in order of decreasing emission reduction potential as follows:

Control Technology	Potential Control Effectiveness
RTO	98%
RCO	95%
Condensers	75%
Good Design/Operation	Standard Case

As noted in the table, an RTO has the highest VOC control effectiveness. The KDHE's review of the RBLC identified a maximum estimated efficiency of 95% for an RTO. However, Goodyear Topeka is proposing to install a new RTO with destruction/removal efficiency of 98% to control VOC emissions from Mixer #1. In accordance with the steps of the top-down BACT process, Goodyear Topeka selected the top control option; and as a result, does not need to provide cost and other information related to the other control options. Therefore, BACT is determined to be continuous operation of the RTO whenever Mixer #1 is in operation and mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions.

B. *Emission Limitations:* Goodyear Topeka proposed the following BACT emission limitations for Mixer #1: Emissions from mixing rubber compound formulations containing coupling agent at temperatures that would release ethanol emissions shall not exceed 112.37 tons VOC during each consecutive twelve month period and 2.48 lb VOC per ton of rubber mixed, as calculated post RTO control.

C. *Operating Scenario:* As part of evaluating the top control option and its degree of effectiveness, mixing rubber compounds when coupling agent is not contained in rubber compound formulations generates relatively low emissions as stated in Section **V.**B. For this operating scenario, an add-on control technology is not warranted. Therefore, BACT is 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.

D. *Capture Efficiency:* An add-on control device only reduces those emissions that are captured by and routed to it. Goodyear Topeka identified and considered the use of a total enclosure which would allow for 100% capture of emissions from the mixer to the RTO. Goodyear Topeka addressed the technical infeasibility of a total enclosure indicating that the mixer is a large piece of equipment (approximately two stories high) and has manual operations both upstream and downstream of the process. In addition, as specified in the EPA-CICA Fact Sheet for Permanent Total Enclosures (EPA-452-F-03-033), installation would not be practical mainly due to difficulty in providing worker comfort and meeting OSHA standards. Therefore, the use of a total enclosure is determined to be technically infeasible.

Goodyear Topeka specified a capture efficiency of 84% for the RTO which was demonstrated through site-specific testing at Goodyear Lawton Tire Plant located in Lawton, Oklahoma. The configuration of Mixer #1 and rubber loading and unloading systems on the mixers at Goodyear Topeka are identical to those utilized at Goodyear Lawton, including a nearly identical ventilation system. Therefore, it is appropriate to use 84% capture efficiency for the RTO at Goodyear Topeka.