

Commonwealth of Kentucky
Division for Air Quality
STATEMENT OF BASIS / SUMMARY

Title V, Operating
Permit: V-25-022

Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA)
Georgetown, KY 40324

4/15/2026
William Parsons, Reviewer

| | |
|------------------|--------------|
| SOURCE ID: | 21-209-00072 |
| AGENCY INTEREST: | 126184 |
| ACTIVITY: | APE20250001 |

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 8734, Testing Laboratories

Single Source Det. Yes No If Yes, Affiliated Source AI: 7998

Source-wide Limit Yes No If Yes, See Section 4, Table A

28 Source Category Yes No If Yes, Category:

County: Scott

Nonattainment Area N/A PM₁₀ PM_{2.5} CO NO_x SO₂ Ozone Lead

If yes, list Classification:

PTE* greater than 100 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 250 tpy for any criteria air pollutant Yes No

If yes, for what pollutant(s)?

PM₁₀ PM_{2.5} CO NO_x SO₂ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) Yes No

If yes, list which pollutant(s): Xylenes

PTE* greater than 25 tpy for combined HAP Yes No

*PTE does not include self-imposed emission limitations.

Description of Facility:

Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA) is a research and development laboratory. Research and development activities include operations that will be used to test a variety of parts to support future production of automobiles and light duty trucks in North America. Current lab responsibilities include, but are not limited to air bag testing, metals testing, paint quality testing, etc.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: V-25-022

Activities: APE20250001

Received: May 22, 2025

Application Complete Date(s): July 16, 2025

Permit Action: Initial Renewal Significant Rev Minor Rev Administrative

Construction/Modification Requested? Yes No NSR Applicable? Yes No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action Yes No

APE20250001 Renewal:

The application received, May 22, 2025, is for the renewal of the facility's air permit. A number of alterations to the permit were made as a part of this renewal.

1. The facility requested the option of either operating the spray booths with filter pressure drop monitoring, or operating the spray booths without filter pressure drop monitoring. This request was denied because it would conflict with Section E of the permit. In accordance with Section E, "owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions." If the facility is operating in the booths, then the booth associated control equipment must be operated and maintained appropriately. Instead of granting the request, pressure drop monitoring frequency was changed to weekly. Booth #7 was noted to not have filters.
2. Paint booth #8 was not installed and the permit was updated to reflect these changes.
3. A number of insignificant activities were requested to be removed. These include:
 - a. Roller hem
 - b. Slush Machine
 - c. End Mill
 - d. Vibration Weld
 - e. Stitch Machine
 - f. Assembly Line (engine)
 - g. Axle Assembly Unit
 - h. Drill Press
 - i. Metal Cutting
 - j. Lathe
 - k. Powder Coating Machine
 - l. Stamping Press
 - m. Milling
 - n. Production Trials
 - o. Facilities Hot Water Heater B

| V-25-022 Emission Summary | | |
|--|-------------------|-----------------------|
| Pollutant | 2024 Actual (tpy) | PTE V-25-022 (tpy) |
| CO | 1.26 | 1.55 |
| NO _x | 1.50 | 1.85 |
| PT | 0.21 | 6.32 |
| PM ₁₀ | 0.21 | 6.32 |
| PM _{2.5} | 0.13 | 6.32 |
| SO ₂ | 0.0090 | 0.011 |
| VOC | 3.49 | 346.9* |
| Lead | 0 | 7.92E-05 |
| Greenhouse Gases (GHGs) | | |
| Carbon Dioxide | 1,795 | 2,214 |
| Methane | 0.034 | 0.042 |
| Nitrous Oxide | 0.033 | 0.0042 |
| CO ₂ Equivalent (CO ₂ e) | 1,806 | 2,216 |
| Hazardous Air Pollutants (HAPs) | | |
| Ethyl Benzene | 0.064 | 1.92 |
| Ethylene Glycol | 0.060 | 2.16 |
| Formaldehyde | 0.0066 | 0.24 |
| Methanol | 0.084 | 3.03 |
| Toluene | 0.076 | 1.92 |
| Xylenes | 0.53 | 17.28 |
| Combined HAPs | 0.82 | 26.59 |

**VOC has a source-wide emission limit of 35 tons per year.*

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

| Emission Units # 01-04, Paint Booths #1, #2, #3, #4 and Emission Units 10-11 Paint Booths #5, #6, and EU12 High Viscosity Material Testing Booth (Booth #7) | | | | |
|--|-----------------------------------|--|---|---|
| Pollutant | Emission Limit or Standard | Regulatory Basis for Emission Limit or Standard | Emission Factor Used and Basis | Compliance Method |
| PM | 2.34 lbs/hr | 401 KAR 59:010, Section 3(2) | Material Balance & SDS, 36% transfer efficiency | Dry Filters, 95% C.E., Weekly Pressure Drop Reading |
| PM | 20% opacity | 401 KAR 59:010, Section 3(1) | N/A | Weekly Stack Visual Observation |
| VOC | 35 tpy of VOC emissions | To preclude the applicability of 401 KAR 51:017 | Material Balance & SDS | Recordkeeping Requirements |

Initial Construction Date: 7/2015 booths 1-4, 2/2023 booths 5-7

**Process Description:
 (EIS Designation 01-05)**

Seven paint booths equipped with a combination of automatic and manual spray guns. Spray guns will consist of robotic bell and electrostatic applicators.

Paint booths will be supported by one or more electric drying ovens. The purpose of the paint spray booths is to perform paint quality analysis.

Construction Date for Booths 1-4: July 2015

Construction Date for Booths 5-7: February 2023

Controls: Dry filters used for PM/PM₁₀ emissions control

Booths #1-#6 Control Efficiency: 95 percent

Booth #7 Control Efficiency: None

Applicable Regulation:

401 KAR 50:012, *General application*, In the absence of a standard specified in Title 401, all major air contaminant sources shall as a minimum apply control procedures that are reasonable, available, and practical.

401 KAR 59:010, *New process operations*, applies to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

State Origin Requirement

401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Emission Units # 01-04, Paint Booths #1, #2, #3, #4 and Emission Units 10-11 Paint Booths #5, #6, and EU12 High Viscosity Material Testing Booth (Booth #7)

Comments:

The emissions from paint coating are calculated using mass balances. A transfer efficiency of 36% is assumed for calculating PM/PM₁₀ emissions from coating activities. A particulate matter control efficiency of 95% is assumed for the spray booth filters. 3000 hours of operation per year assumed for coating activities. For Booth #7 which does not have filters, 70% particulate matter control is assumed for operating within a building enclosure. Booth #7 does not have an actual booth enclosure as it is a caged off area operated in the building instead. The high viscosity testing insignificant activity is a separate location and activity from the Booth #7 High Viscosity Material Testing.

401 KAR 59:225, 40 CFR 60 Subpart MM, and 40 CFR 63 Subpart IIII do not apply to the facility because of its status as a research and development laboratory.

Emission Unit #06 Source-wide Natural Gas Combustion Units

Initial Construction Date: 7/2015

Process Description:

EP06 Source-wide Natural Gas Combustion Units

- a. Paint Booth Water Heater Main Burner (0.630 MMBtu/hr)
- b. Paint Booth Water Heater Auxiliary Burner (0.400 MMBtu/hr)
- c. Paint Booth Pre-Heater (2.5 MMBtu/hr)
- d. Auxiliary Make-Up Air Unit Burner (0.300 MMBtu/hr)
- e. Facilities Hot Water Heater (0.500 MMBtu/hr)

State Origin Requirement

401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*, applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances, provided such emissions are not elsewhere subject to the provisions of the administrative regulations of the Division for Air Quality.

Comments:

401 KAR 63:002 Section (2)(4)(iii), **40 C.F.R. 63.7480 through 63.7575, Tables 1 through 13 (Subpart DDDDD)**, *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*, does not apply because the hot water heaters are exempted from this subpart and the process heaters utilized in paint booths are direct heat exchangers.

Pursuant to 40 CFR 63, Subpart DDDDD, Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass/bio-based solid fuel and is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 MMBtu/hr heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on demand hot water.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements/Results

| Emission Unit(s) | Control Device | Parameter | Regulatory Basis | Frequency | Test Method | Permit Limit | Test Result | Thruput and Operating Parameter(s) Established During Test | Activity Graybar | Date of last Compliance Testing |
|-------------------------|-----------------------|------------------|-------------------------|------------------|--------------------|---------------------|--------------------|---|-------------------------|--|
| N/A | | | | | | | | | | |

Footnotes:

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

| Emission and Operating Limit | Regulation | Emission Unit |
|-------------------------------------|--|----------------------|
| 35 tpy of VOC emissions | To preclude the applicability of 401 KAR 51:017, <i>Prevention of significant deterioration of air quality</i> | *Source-wide |

*Source-wide only includes AI 126184 and excludes AI 7998.

Table B - Summary of Applicable Regulations:

| Applicable Regulations | Emission Unit |
|---|----------------------|
| 401 KAR 59:005, <i>General provisions</i> | EP01-04, 10-13 |
| 401 KAR 59:010, <i>New process operations</i> | EP01-04, 10-13 |
| 401 KAR 63:020, <i>Potentially hazardous matter or toxic substances</i> | EP01-04, 10-13 |

Table C - Summary of Precluded Regulations:

| Precluded Regulations | Emission Unit |
|---|----------------------|
| 401 KAR 51:017, <i>Prevention of significant deterioration of air quality</i> | |

Table D - Summary of Non Applicable Regulations:

| Non Applicable Regulations | Emission Unit |
|-----------------------------------|----------------------|
| N/A | |

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*

The Division for Air Quality (Division) has performed SCREEN View on December 8, 2022 of potentially hazardous matter or toxic substances (Cobalt, Manganese, Nickel, Silica) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. The Division has performed AERMOD on December 20, 2022 of potentially hazardous matter or toxic substances (Formaldehyde, Methanol, Toluene, Xylenes, Trimethylbenzene, Ethylene Glycol, Ethyl Benzene, Cumene) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination

Toyota Motor Engineering & Manufacturing North America, Inc. (TEMA), Source ID # 21-209-00072, Agency Interest: 126184 and Toyota Motor Manufacturing, Kentucky, Incorporated (TMMK), Source ID # 21-209-00030, Agency Interest: 7998, are located on contiguous properties, belong to the same industrial grouping, and are under common control. By the definition of major stationary source in 401 KAR 51:001, TEMA and TMMK constitute one major source for PSD purpose. By the definition of major source in 401 KAR 52:001 for Title V program, they constitute one major source for non-hazardous regulated air pollutants and hazardous air pollutants, therefore, both facilities' emissions should be aggregated for the purpose of Title V, and PSD applicability determination.

SECTION 5 – PERMITTING HISTORY

| Permit | Permit Type | Activity # | Complete Date | Issuance Date | Summary of Action | PSD/Syn Minor |
|---------------|--------------------|----------------------------|----------------------|----------------------|---|----------------------|
| V-15-037 | Initial | APE20150001 | 5/15/2015 | 9/15/2015 | Initial Construction | Syn Minor |
| V-20-012 | Renewal | APE20200001 | 4/21/2020 | 11/22/2020 | Permit Renewal | N/A |
| V-20-012 R1 | Minor Revision | APE20220002 APE20220003 | 12/7/2022 | 4/3/2023 | Addition of 4 Paint Booths (EU10~13) and an R&D Battery Lab | N/A |

SECTION 6 – PERMIT APPLICATION HISTORY

N/A

APPENDIX A – ABBREVIATIONS AND ACRONYMS

| | |
|-------------------|---|
| AAQS | – Ambient Air Quality Standards |
| BACT | – Best Available Control Technology |
| Btu | – British thermal unit |
| CAM | – Compliance Assurance Monitoring |
| CO | – Carbon Monoxide |
| Division | – Kentucky Division for Air Quality |
| ESP | – Electrostatic Precipitator |
| GHG | – Greenhouse Gas |
| HAP | – Hazardous Air Pollutant |
| HF | – Hydrogen Fluoride (Gaseous) |
| MSDS | – Material Safety Data Sheets |
| mmHg | – Millimeter of mercury column height |
| NAAQS | – National Ambient Air Quality Standards |
| NESHAP | – National Emissions Standards for Hazardous Air Pollutants |
| NO _x | – Nitrogen Oxides |
| NSR | – New Source Review |
| PM | – Particulate Matter |
| PM ₁₀ | – Particulate Matter equal to or smaller than 10 micrometers |
| PM _{2.5} | – Particulate Matter equal to or smaller than 2.5 micrometers |
| PSD | – Prevention of Significant Deterioration |
| PTE | – Potential to Emit |
| SO ₂ | – Sulfur Dioxide |
| TF | – Total Fluoride (Particulate & Gaseous) |
| VOC | – Volatile Organic Compounds |