

**NORTH CAROLINA  
DIVISION OF AIR QUALITY  
Application Review**

**Region:** Mooresville Regional Office  
**County:** Rowan  
**NC Facility ID:** 8000045  
**Inspector's Name:** Karyn Kurek  
**Date of Last Inspection:** 02/25/2022  
**Compliance Code:** 3 / Compliance - inspection

**Issue Date:** xx

<p style="text-align: center;"><b>Facility Data</b></p> <p><b>Applicant (Facility's Name):</b> Daimler Trucks North America LLC</p> <p><b>Facility Address:</b>  Daimler Trucks North America LLC  11550 Statesville Boulevard  Cleveland, NC 27013</p> <p><b>SIC:</b> 3711 / Motor Vehicles And Car Bodies  <b>NAICS:</b> 33612 / Heavy Duty Truck Manufacturing</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V  <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p style="text-align: center;"><b>Permit Applicability (this application only)</b></p> <p><b>SIP:</b> N/A  <b>NSPS:</b> N/A  <b>NESHAP:</b> N/A  <b>PSD:</b> PALs Permit Renewals for NOx and GHGs  <b>PSD Avoidance:</b> N/A  <b>NC Toxics:</b> N/A  <b>112(r):</b> N/A  <b>Other:</b> N/A</p>
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Contact Data			Application Data
<p style="text-align: center;"><b>Facility Contact</b></p> <p>Colin Buchanan  Environmental Engineer  (704) 645-5353  11550 Statesville  Boulevard  Cleveland, NC 27013</p>	<p style="text-align: center;"><b>Authorized Contact</b></p> <p>Craig Redshaw  Plant Manager  (704) 645-5100  11550 Statesville  Boulevard  Cleveland, NC 27013</p>	<p style="text-align: center;"><b>Technical Contact</b></p> <p>Colin Buchanan  Environmental Engineer  (704) 645-5353  11550 Statesville  Boulevard  Cleveland, NC 27013</p>	<p><b>Application Number:</b> 8000045.21B  <b>Date Received:</b> 02/02/2021  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Significant  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 04625/T37  <b>Existing Permit Issue Date:</b> 05/24/2021  <b>Existing Permit Expiration Date:</b> 04/30/2026</p>

**Total Actual emissions in TONS/YEAR:**

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	0.0600	9.90	232.88	8.28	2.45	6.86	4.24 [Xylene (mixed isomers)]
2019	0.0700	12.56	351.17	10.47	7.85	10.48	6.49 [Xylene (mixed isomers)]
2018	0.0700	12.25	344.67	10.21	3.18	10.10	6.22 [Xylene (mixed isomers)]
2017	0.0600	10.08	256.85	8.41	2.42	6.87	4.76 [Xylene (mixed isomers)]
2016	0.0700	11.43	276.64	9.56	4.13	8.87	5.72 [Xylene (mixed isomers)]

<p><b>Review Engineer:</b> Rahul Thaker</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> May 9, 2022</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 04625/T38  <b>Permit Issue Date:</b> xx  <b>Permit Expiration Date:</b> 04/30/2026</p>
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## 1. Purpose of Application

Daimler Trucks North America LLC (“Daimler”), Cleveland, Rowan County, NC, submitted a permit application on January 26, 2021 to renew the current PALs (Actuals Plantwide Applicability Limitations) for both NOx (Nitrogen Oxides) and GHGs (Greenhouse Gases) of 52.5 tons per year (TPY) and 90,045 TPY CO<sub>2</sub>e, respectively. The application was deemed a “significant modification” to its current Title V permit; thus, it will be processed in accordance with 15A NCAC 02Q .0516.

## 2. Facility Description

The facility manufactures Class 6, 7, and 8 diesel trucks. Classes are based on truck weight. Class 6 between 19,501 and 26,000 pounds, Class 7 between 26,001 and 33,000 pounds, and Class 8 weighs 33,001 pounds and over.

## 3. Application Chronology

1/26/2021	DAQ received the electronic application without processing fees.
2/2/2021	DAQ received the application processing fees.
2/19/2021	DAQ sent the additional information request on various issues (regulating GHGs v. NAAQS, use of applicable standards under NSPS as emissions factors for various engines, GHGs emissions factors under Part 98, conversion factor for engineering unit kgs to lbs, potential to emit v. current PAL for GHGs, double-counting of NOx emissions for engines for baseline actual emissions, potential to emit for GHGs for engines, etc.).
2/26/2021	Received the requested information and the revised application.
3/10/2021	Discussed with the applicant his submittal of 2/26/2021 and emphasized the issues regarding the conversion factor for kg and GHGs potential emissions, and PAL regulation prohibiting renewal of GHGs PAL at the current level as the potential to emit for GHGs were less than the current PAL.
4/13/2021	Received the information on all outstanding issues.

## 4. Statement of Compliance

The Mooresville Regional Office performed the compliance inspection on February 25, 2022 and concluded, “based on my observations during this inspection, this facility appeared to be in compliance with the applicable air quality regulations.” In addition, Mr. Craig Redshaw, the current responsible official (RO) of the facility certified that the “facility is in compliance with all applicable requirements” through the completed Form E5 “Title V Compliance Certification”.

## 5. Permit Modification/Changes

### 5.1 Renewal of Current PAL for NOx and GHGs

The Permittee obtained an initial PAL of 52.5 tons/yr for NOx for its Cleveland facility on August 10, 2011 (04625T30), which is effective from August 10, 2011 to July 31, 2021. Then, the Permittee obtained an initial PAL of 90,045 tons/yr CO<sub>2</sub>e for GHGs for this facility on February 22, 2012 (04625T31), which is effective from February 22, 2012 to July 31, 2021. As stated earlier, the Permittee requested to renew the PALs for both NOx and GHGs on January 26, 2021. The DAQ will process the application in accordance with its SIP (State Implementation Plan)-approved PSD regulation in 15A NCAC 02D .0530 which incorporates the requirements in §51.166(w)(10) “Renewal of PAL” with one exception in 02D .0530(i). Each of the elements for PAL renewal are discussed below:

#### §51.166(w)(10)(i)

*The reviewing authority shall follow the procedures specified in paragraph (w)(5) of this section in approving any request to renew a PAL for a major stationary source, and shall provide both the proposed PAL level and a written rationale for the proposed PAL level to the public for review and comment. During such public review, any person may propose a PAL level for the source for consideration by the reviewing authority.*

Before finalizing the renewal of both the NO<sub>x</sub> and GHGs PALs for the facility, the DAQ will send the draft permit for seeking public comments pursuant to §51.166(w)(5) “public participation”. Since the application is processed in accordance with the Title V procedures in 02Q .0500, the DAQ will ensure that the requirement in 02Q .0521 “public participation” is met as well.

#### §51.166(w)(10)(ii) Application Deadline

*The plan shall require that a major stationary source owner or operator shall submit a timely application to the reviewing authority to request renewal of a PAL. A timely application is one that is submitted at least 6 months prior to, but not earlier than 18 months from, the date of permit expiration. This deadline for application submittal is to ensure that the permit will not expire before the permit is renewed. If the owner or operator of a major stationary source submits a complete application to renew the PAL within this time period, then the PAL shall continue to be effective until the revised permit with the renewed PAL is issued.*

The Permittee submitted a timely application on January 26, 2021 for renewal of PALs for both NO<sub>x</sub> and GHGs. The application fees were received on February 2, 2021, making the application “complete” in accordance with 15A NCAC 02Q .0507(j). The application submittal date is at least 6 months prior to the expiration date of July 31, 2021 for PALs for these pollutants. Thus, the NO<sub>x</sub> PAL (52.5 tons/yr) and GHGs PAL (90,045 tons/yr CO<sub>2e</sub>) remain effective even after the expiration date, until the Title V permit with the renewed PALs is issued or denied for each of these pollutants.

#### §51.166(w)(10)(iii) Application Requirements

*The application to renew a PAL permit shall contain the information required in paragraphs (w)(10)(iii)(a) through (d) of this section.*

*(a) The information required in paragraphs (w)(3)(i) through (iii) of this section.*

#### §51.166(w)(3)(i)

*A list of all emissions units at the source designated as small, significant or major based on their potential to emit. In addition, the owner or operator of the source shall indicate which, if any, Federal or State applicable requirements, emission limitations, or work practices apply to each unit.*

The Tables 5-1 (NO<sub>x</sub> PAL) and 5-2 (GHGs) below provide a complete list of emissions units at the facility along with their classifications (small, synthetic minor, or major) based upon the potential to emit.

The facility is subject to the PALs for VOC, NO<sub>x</sub>, and GHGs, pursuant to 02D .0530. In addition to these facility-wide requirements, the following additional “applicable requirements” shall apply to various emissions units.

15A NCAC 02D 0503 “Particulates from Fuel Burning Indirect Heat Exchangers”

15A NCAC 02D .0515 “Particulates from Miscellaneous Industrial Processes”

15A NCAC 02D .0516 “Sulfur Dioxide Emissions from Combustion Sources”

15A NCAC 02D .0521 “Control of Visible Emissions”

15A NCAC 02D .0524 “New Source Performance Standards” [40 CFR 60 Subparts Dc]

15A NCAC 02D .0530 “Prevention of Significant Deterioration”

15A NCAC 02D .0952 “Petition for Alternative Controls for RACT for 15A NCAC 02D .0967 Miscellaneous Metal and Plastic Parts Coatings”

15A NCAC 02D .0958 “Work Practices for Sources of Volatile Organic Compounds”

15A NCAC 02D .1111 “Maximum Achievable Control Technology” (40 CFR 63 Subparts PPPP, MMMM, and DDDDD)

15A NCAC 02D .1806 “Control and Prohibition of Odorous Emissions”

15A NCAC 02Q .0711 “Emission Rates Requiring a Permit”

All of these requirements are adequately included in the current permit except the corrections/changes discussed in this application review. All of them are enforced upon by EPA, citizens of US, as defined in Clean Air Act (CAA), and NCDAQ, except the odorous emissions control requirement (02D .1806) and air toxics permitting requirement

(02Q .0711), which are enforceable by the DAQ only. It should be noted that none of the emissions units are subject to any source-specific applicable requirement for emissions of NOx and GHGs, except the current PALs for these pollutants.

*§51.166(w)(3)(ii)*

*Calculations of the baseline actual emissions (with supporting documentation). Baseline actual emissions are to include emissions associated not only with operation of the unit, but also emissions associated with startup, shutdown, and malfunction.*

The Tables 5-1 and 5-2 provide the information on baseline actual emissions (BAE) for NOx and GHGs, respectively. The entire facility BAEs are 13.4 TPY and 17,857 TPY for these pollutants in the same order. The BAE for each emission unit is determined based upon the actual emissions for 24 consecutive months from January 2018 through December 2019. The BAEs are based upon actual natural gas usage, operating hours for diesel engines, and permit-included emissions factors for various emissions sources (boilers, miscellaneous combustion sources, paint drying ovens, fire umps, emergency generator, dynamometers, and dry ice cleaning system). It should be noted that due to the nature of operations at the facility, all emissions are stack emissions; thus, no fugitive emissions are expected. Moreover, BAE for each unit includes the emissions due to start-up, shut-down and malfunction. The facility has grouped emissions for certain emissions units. There are no units permanently shut-down after this selected baseline period which would otherwise require removal of the associated BAE for the unit from the PAL level. There is only one “new unit”, which is the dry ice cleaning system (ID No. ES-DRYICE). This source was constructed after the selected baseline period; hence as per the PAL provision, potential to emit (PTE) shall be added to the PAL level instead of the BAE. The dry ice system is expected to emit emissions of GHGs, but not NOx. So, only the GHGs PAL is affected for this renewal.

In sum, the DAQ has verified the BAEs for the facility for each pollutant and found them to be accurate.

*§51.166(w)(3)(iii)*

*The calculation procedures that the major stationary source owner or operator proposes to use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total for each month as required by paragraph (w)(13)(i) of this section.*

The applicant has proposed the same monitoring approach as included in the current PALs for NOx and GHGs for renewal, which is the use of emissions factors for estimating emissions for various emissions units.

*(b) A proposed PAL level.*

The applicant has proposed to renew the NOx PAL for its Cleveland facility at a level of the current PAL of 52.5 TPY.

With regard to GHGs, the applicant initially proposed to renew the PAL at the current PAL level of 90,045 tons as CO<sub>2e</sub> per rolling 12 months. However, the PTE for GHGs is estimated to be 61,262 tons CO<sub>2e</sub> per year. In brief, the PTE has reduced below the current PAL level. Since the PAL cannot be renewed at a level higher than the facility’s PTE, the applicant has amended its initial proposal and requested to renew the GHGs PAL at 61,262 tons CO<sub>2e</sub> per rolling 12-month period.

*(c) The sum of the potential to emit of all emissions units under the PAL (with supporting documentation).*

As provided in the Table 5-1 below, the facility’s current potential to emit (PTE) is 52.5 TPY which is a sum of the PTE for each of the emission units. The applicant has provided the PTE emissions calculations for each emissions unit and the DAQ has found them correctly determined.

With regard to the GHGs, Table 5-2 provides the facility’s current PTE of 61,262 TPY, which is a sum of the PTE for each of the emission units. The applicant has provided the PTE emissions calculations for each emissions unit and the DAQ has found them correctly determined.

*(d) Any other information the owner or operator wishes the reviewing authority to consider in determining the appropriate level for renewing the PAL.*

None.

#### §51.166(w)(10)(iv) PAL Adjustment

*In determining whether and how to adjust the PAL, the reviewing authority shall consider the options outlined in paragraphs (w)(10)(iv) (a) and (b) of this section. However, in no case may any such adjustment fail to comply with paragraph (w)(10)(iv)(c) of this section.*

*(a) If the emissions level calculated in accordance with paragraph (w)(6) of this section is equal to or greater than 80 percent of the PAL level, the reviewing authority may renew the PAL at the same level without considering the factors set forth in paragraph (w)(10)(iv)(b) of this section; or*

*(b) The reviewing authority may set the PAL at a level that it determines to be more representative of the source's baseline actual emissions, or that it determines to be appropriate considering air quality needs, advances in control technology, anticipated economic growth in the area, desire to reward or encourage the source's voluntary emissions reductions, or other factors as specifically identified by the reviewing authority in its written rationale.*

*(c) Notwithstanding paragraphs (w)(10)(iv)(a) and (b) of this section:*

*(1) If the potential to emit of the major stationary source is less than the PAL, the reviewing authority shall adjust the PAL to a level no greater than the potential to emit of the source; and*

*(2) The reviewing authority shall not approve a renewed PAL level higher than the current PAL, unless the major stationary source has complied with the provisions of paragraph (w)(11) of this section (increasing a PAL).*

It should be noted that NC's SIP-approved PSD provision in 15A NCAC 02D .0530(i) includes the following requirement:

*(i) For the purposes of this Rule, 40 CFR 51.166(w)(10)(iv)(a) shall read: "If the emissions level calculated in accordance with Paragraph (w)(6) of this Section is equal to or greater than 80 percent of the PAL level, the Director shall renew the PAL at the same level." 40 CFR 51.166(w)(10)(iv)(b) is not incorporated by reference.*

Because the provision §51.166(w)(10)(iv)(b) is not incorporated into NC's PSD regulation and the provision in §51.166(w)(10)(iv)(a) is replaced with 02D .0530(i), the facility request shall conform to the requirements in both 02D .0530(i) and §51.166(w)(10)(iv)(c) for renewing the current PALs for NO<sub>x</sub> and GHGs both.

Regarding the emission level at the time of renewal for NO<sub>x</sub>, it is determined by adding the BAE to the significant rate for NO<sub>x</sub>. That is, 13.4 TPY + 40 TPY = 53.4 TPY, which exceeds the criterion of 80% of the current PAL level (i.e., 42.0 TPY); thus, comply with the requirement in 15A NCAC 02D .0530(i), allowing for renewal at the current PAL level without further justification. It is noted that this level of emission rate (53.4 TPY) is slightly higher than the current PAL (52.5 TPY). Moreover, the facility's current PTE (52.5 TPY) equals to the existing PAL (52.5 TPY) for NO<sub>x</sub>. Thus, the DAQ can renew the PAL at the current PAL level as the facility has not requested to increase the PAL, meeting the requirement in §51.166(w)(10)(iv)(c) as well.

Similarly, with respect to GHGs emissions level at the time of renewal, it is determined by adding the significance level of GHGs to its BAEs. That is, 17,857 TPY CO<sub>2e</sub> + 75,000 CO<sub>2e</sub> = 92,857 TPY CO<sub>2e</sub>, which exceeds the criterion of 80% of the current PAL level (i.e., 72,036.0 TPY); thus, comply with the requirement in 15A NCAC 02D .0530(i), allowing for renewal at the current PAL level without further justification. It is noted that this level of emission rate (92,857 TPY CO<sub>2e</sub>) is slightly higher than the current PAL (90,045 TPY CO<sub>2e</sub>). But, the facility's current PTE (61,262 TPY CO<sub>2e</sub>) has decreased below the current PAL (90,045 TPY CO<sub>2e</sub>). Thus, the DAQ can renew the PAL at a level no higher than the current PTE, conforming to the requirements in §51.166(w)(10)(iv)(c) as well.

After considering the reasoned basis above, the DAQ exercises its discretion in §51.166(w)(10)(iv) in determining that the adjustment to the current PAL for NOx is not warranted and approves to renew the NOx PAL at the current level of 52.5 TPY. The DAQ concludes that this renewed PAL level is reasonably representative of facility's baseline actual emissions for NOx.

In addition, DAQ exercises its discretion in §51.166(w)(10)(iv) in determining that the adjustment to the current PAL is warranted and approves to renew the GHGs PAL at a level of 61,262 TPY CO<sub>2e</sub>. The DAQ concludes that this renewed PAL level is reasonably representative of facility's baseline actual emissions for GHGs.

**Table 5-1: NOx - Emissions Units, BAE, and Potential to Emit**

Small, Significant, or Major	Source Description	2018 CY		2019 CY		Potential Emissions
		(lb/yr)	(tpy)	(lb/yr)	(tpy)	(tpy)
Small	ES-1A - Cassis Booth A Oven		12.12		12.42	47.25
Small	ES-2A - Chassis Booth B Oven					
Small	ES-39B - Tennessee Dry Off Oven					
Small	ES-38A - Paint Booth #1 Oven					
Small	ES-HPC-PDO - Hood Paint center dry off oven					
Small	ES-4B - Primer Booth Oven					
Small	ES-19 - Topcoat Oven East					
Small	ES-20 - Topcoat Ovent West					
Small	ES-27 - Paint Booth #6 and #7 Oven					
Small	ES-AO-1 - Cab Adhesive Oven					
Small	ES-AO-2 - Cab Adhesive Oven					
Small	ES-59O - Prefab Oven					
Small	ES-BLR-1 - One natural gas-fired boiler (0.94 MMBtu/hr maximum heat input)					
Small	ES-BLR-2 - One natural gas-fired boiler (6.28 MMBtu/hr maximum heat input)					
Small	ES-BLR-3 - One natural gas-fired boiler (8.37 MMBtu/hr maximum heat input)					
Small	ES-BLR-4 - One natural gas-fired boiler (5.14 MMBtu/hr maximum heat input)					
Small	ES-BLR-5 - One natural gas-fired boiler (33.6 MMBtu/hr maximum heat input)					
Small	ES-BLR-6 - One natural gas-fired boiler (3.38 MMBtu/hr maximum heat input)					
Small	IES-12 - Miscellaneous combustion sources (except ES-5 and all paint drying ovens)					
Small	IES-FP1 - Fire Pump		0.11		0.13	3.49
Small	IES-FP2 - Fire Pump					
Small	IES-EG - Emergency Generator					0.74
Small	IES-DYNA1, IES-DYNA2, and IES-DYNA3 -Three dynamometers		1.02		1.02	1.02
	<b>Total</b>		<b>13.3</b>		<b>13.6</b>	<b>52.50</b>
			12.38		12.68	
			(tpy)			
	<b>2018 CY and 2019 CY Average NOx Emissions Rate</b>		<b>13.4</b>			

**Table 5-2: GHGs - Emissions Units, BAE, and Potential to Emit**

Small, Significant, or Major	Source Description	2018 CY		2019 CY		Potential Emissions
		(lb/yr)	(tpy)	(lb/yr)	(tpy)	(tpy)
Small	ES-1A - Cassis Booth A Oven	29,168,079	14,584	29,896,003	14,948	56,773
Small	ES-2A - Chassis Booth B Oven					
Small	ES-39B - Tennessee Dry Off Oven					
Small	ES-38A - Paint Booth #1 Oven					
Small	ES-HPC-PDO - Hood Paint center dry off oven					
Small	ES-4B - Primer Booth Oven					
Small	ES-19 - Topcoat Oven East					
Small	ES-20 - Topcoat Oven West					
Small	ES-27 - Paint Booth #6 and #7 Oven					
Small	ES-AO-1 - Cab Adhesive Oven					
Small	ES-AO-2 - Cab Adhesive Oven					
Small	ES-59O - Prefab Oven					
Small	ES-BLR-1 - One natural gas-fired boiler (0.94 MMBtu/hr maximum heat input)					
Small	ES-BLR-2 - One natural gas-fired boiler (6.28 MMBtu/hr maximum heat input)					
Small	ES-BLR-3 - One natural gas-fired boiler (8.37 MMBtu/hr maximum heat input)					
Small	ES-BLR-4 - One natural gas-fired boiler (5.14 MMBtu/hr maximum heat input)					
Small	ES-BLR-5 - One natural gas-fired boiler (33.6 MMBtu/hr maximum heat input)					
Small	ES-BLR-6 - One natural gas-fired boiler (3.38 MMBtu/hr maximum heat input)					
Small	IES-12 - Miscellaneous combustion sources (except ES-5 and all paint drying ovens)					
Small	IES-FP1 - Fire Pump	3,777.28	1.89	9,573.46	4.79	266.29
Small	IES-FP2 - Fire Pump					
Small	IES-EG - Emergency Generator					
Small	IES-DYNA1, IES-DYNA2, and IES-DYNA3 -Three dynamometers	6,156,997	3078.50	6,156,997	3078.50	3078.50
Small	ES-DRYICE - Dry Ice Cleaning System	0.00	0.00	36,111	18.06	1,144
	<b>Total</b>	<b>35,328,853</b>	<b>17,664</b>	<b>36,098,684</b>	<b>18,049</b>	<b>61,262</b>
		(lb/yr)	(tpy)			
	<b>2018 CY and 2019 CY Average GHG Emissions Rate</b>	<b>35,713,769</b>	<b>17,857</b>			

**5.2 Changes to Existing PALs**

The Permittee has requested the following changes to the monitoring requirements for both the NOx and GHGs, as included in the current permit 04625T37:

(i) Include the following missing sources as below from the NOx PAL in Section 2.3 B.1: fire pumps (ID Nos. IES-FP1 and IES-FP2), emergency Generator (ID No. IES-EG), and three dynamometers (ID Nos. IES-DYNA1, IES-DYNA2, and DYNA3). This change will be made.

(ii) Include the following missing sources as below from the GHGs PAL in Section 2.3 C.1: three dynamometers (ID Nos. IES-DYNA1, IES-DYNA2, and DYNA3). This change will be made.

(iii) Revise the Sections 2.3.B.9 and 10, and add a new Section 2.3 B.11 for NOx PAL as below by inserting the highlighted texts. The DAQ approves these requested changes as they define the compliance.

- The Permittee shall record monthly the natural gas burned in the boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. ES-12), paint drying ovens (ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4A, ES-19, ES-20, ES-27, ES-AO-1, ES-AO-2, ES-59O). **The Permittee shall record monthly hours of operation for the fire pumps (IES-FP1 and IES-FP2) and the emergency generator (IES-EG).** The Permittee shall be deemed in violation with New Source Review (NSR) requirements and in noncompliance with 15A NCAC 02D .0530 if the amount of natural gas burned **and hours of operation for diesel sources** is not recorded.
- The Permittee shall calculate the monthly NOx emissions from the natural gas-fired boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. ES-12), paint drying ovens

(ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4A, ES-19, ES-20, ES-27, ESAO-1, ES-AO-2, ES-590 ), **the fire pumps (IES-FP1 and FP2), the emergency generator (IES-EG)** with the following equation:

$$\text{NOx emissions (tons/month)} = \{ 100.0 \text{ lb}/106 \text{ scf} \times C \text{ scf/month} \} + \{ \mathbf{0.031 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{D \text{ hrs/month}} \} + \{ \mathbf{0.031 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{E \text{ hrs/month}} \} + \{ \mathbf{0.0061 \text{ lb}/hp-hr} \times \mathbf{480 \text{ hp}} \times \mathbf{F \text{ hr/month}} \} [2000 \text{ lbs/ton}]$$

Where,

C = natural gas usage in standard cubic feet per month for all the boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. ES-12), paint drying ovens (ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4A, ES-19, ES-20, ES-27, ES-AO-1, ES-AO-2, ES-590)

**D = hours of operation for FP1 per month**

**E = hours of operation for FP2 per month**

**F = hours of operation for EG per month**

- **The Permittee shall use an estimate of 1.0 tons per rolling 12 month period (0.09 tons per calendar month) for the three dynamometers (IES-DYNA1-3) combined.**

(iv) Revise the Sections 2.3.C.9 and 10, and add a new Section 2.3 C.11 for GHGs PAL, by inserting the highlighted texts. The DAQ approves these requested changes as they define the compliance.

- The Permittee shall record monthly the natural gas burned in the boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. ES-12), paint drying ovens (ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4A, ES-19, ES-20, ES-27, ES-AO-1, ES-AO-2, ES-590). The Permittee shall record monthly hours of operation for the fire pumps (IES-FP1 and IESFP2) and the emergency generator (IES-EG). The Permittee shall be deemed in violation with New Source Review (NSR) requirements and in noncompliance with 15A NCAC 02D .0530 if the amount of natural gas burned **and hours of operation for diesel sources** are not recorded.
- The Permittee shall calculate the monthly CO<sub>2e</sub> emissions from the natural gas-fired boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. IES-12), paint drying ovens (ID Nos. ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4B, ES-19, ES-20, ES-27, ES-AO-1, ES-AO-2, ES-590), the diesel-fired fire pumps (ID Nos. IES-FP1 and IES-FP2), and the emergency generator (ID No. IES-EG) and the dry ice cleaning system (ID No. ES-DRYICE) with the following equations:

Natural Gas Sources:

$$\text{CO}_2 \text{ (pounds/month)} = \text{Natural Gas usage (scf/month)} / \mathbf{8.33 \text{ scf/lb}^1};$$

$$\text{CH}_4 \text{ (pounds/month)} = \text{Natural Gas usage (scf/month)} / \mathbf{442,098 \text{ scf/lb}^2};$$

$$\text{N}_2\text{O (pounds/month)} = \text{Natural Gas usage (scf/month)} / \mathbf{4,420,984 \text{ scf/lb}^3};$$

$$\text{CO}_{2e} \text{ (pounds/month)} = [\text{CO}_2 \text{ (pounds/month)}] + [\text{CH}_4 \text{ (pounds/month)} \times \mathbf{25}] + [\text{N}_2\text{O (pounds/month)} \times \mathbf{298}];$$

Diesel Sources:

$$\text{CO}_2 \text{ (pounds/month)} = \{ \mathbf{1.14 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{D \text{ hrs /month}} \} + \{ \mathbf{1.14 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{E \text{ hrs /month}} \} + \{ \mathbf{1.14 \text{ lb}/hp-hr} \times \mathbf{480 \text{ hp}} \times \mathbf{F \text{ hrs /month}} \};$$

$$\text{CH}_4 \text{ (pounds/month)} = \{ \mathbf{0.000046 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{D \text{ hrs /month}} \} + \{ \mathbf{0.000046 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{E \text{ hrs /month}} \} + \{ \mathbf{0.000046 \text{ lb}/hp-hr} \times \mathbf{480 \text{ hp}} \times \mathbf{F \text{ hrs /month}} \};$$

$$\text{N}_2\text{O (pounds/month)} = \{ \mathbf{0.000093 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{D \text{ hrs /month}} \} + \{ \mathbf{0.000093 \text{ lb}/hp-hr} \times \mathbf{225 \text{ hp}} \times \mathbf{E \text{ hrs /month}} \} + \{ \mathbf{0.000093 \text{ lb}/hp-hr} \times \mathbf{480 \text{ hp}} \times \mathbf{F \text{ hrs /month}} \};$$

$$\text{CO}_{2e} \text{ (pounds/month)} = [\text{CO}_2 \text{ (pounds/month)}] + [\text{CH}_4 \text{ (pounds/month)} \times \mathbf{25}] + [\text{N}_2\text{O (pounds/month)} \times \mathbf{298}];$$

<sup>1</sup> Based upon the emission factor of 53.06 kg/MMBtu, the high heat value of 1,026 Btu/scf, and the engineering unit conversion of 2.20462 lb/kg.

<sup>2</sup> Based upon the emission factor of 1.0E-03 kg/MMBtu, the high heat value of 1,026 Btu/scf, and the engineering unit conversion of 2.20462 lb/kg.

<sup>3</sup> Based upon the emission factor of 1.0E-04 kg/MMBtu, the high heat value of 1,026 Btu/scf, and the engineering unit conversion of 2.20462 lb/kg.



and

$\text{CO}_2\text{e (tons/month)} = [\text{CO}_2\text{e (pounds/month) from NG sources} + \text{CO}_2\text{e (pounds/month) from diesel sources} + \text{dry ice cleaning system}] / 2000 \text{ lbs/ton}$

Where:

D = hours of operation per month (ID No. IES-FP1)

E = hours of operation per month (ID No. IES-FP2)

F = hours of operation per month (ID No. IES-EG)

- **The Permittee shall use an estimate of 3,078 tons per rolling 12 month period (256 tons per calendar month) for the three dynamometers (ID Nos. IES-DYNA1-3) combined.**

### 5.3 VOC PAL Revalidation

In accordance with §51.166(w)(12)(ix), the PAL permit requires the Permittee to revalidate the emissions factors and any other data used in calculating VOCs emissions through performance test or other scientifically valid means once every five years. Refer to Section 2.3.A.8 of the current permit. The VOC PAL was issued on November 8, 2016; thus, the revalidation is due by November 8, 2021. The Permittee has used this PAL renewal application (for both NOx and GHGs) as an opportunity to also submit the revalidation request. Each of the items under the revalidation request is discussed below:

#### Spray Coating and Assembly Operations (ID No. ES-SCAO) [Section 2.3 A.11]

As required, the Permittee uses a mass balance method to estimate VOCs emissions for the solvent coating and assembly operations. The DAQ believes that the Permittee is using the most conservative method, for estimating emissions for these units. The mass balance approach specifically accounts for all losses by considering all VOC-containing purchased materials in a month and the amount collected in the waste drums. The DAQ believes that this method remains valid for estimating emissions for the above emissions units.

Combustion Sources: Natural gas burned in the boilers (ID Nos. ES-BLR-1, ES-BLR-3, ES-BLR-4 and ES-BLR-5), miscellaneous combustion source (ID No. ES-12), and paint drying ovens (ES-1A, ES-2A, ES-39B, ES-38A, ES-HPC-PDO, ES-4B, ES-19, ES-20, ES-27, ES-AO-1, ESAO-2, ES-590) [Section 2.3 A.12]

The permit includes the following emission factor for natural gas firing in these emissions units:

5.5 lb/10<sup>6</sup> scf

The use of the above emissions factors remains valid.

Storage Tanks: One 10,000 gallon antifreeze tank (ID No. IES-1), three 10,000 gallon diesel fuel tanks (ID Nos. IES-2, IES-3, and IES-4), one 4,000 gallon butanol tank (ID No. IES-5), four 10,000 gallon purge tanks (ID Nos. IES-6, IES-7, IES-8, and IES-9), two distillation units (ID Nos. IES-10 and IES-11), five (125 gallon) bulk tanks for new mix room (ID No. IES-14), and two (55 gallon) pigable tanks for new mix room (ID No. IES-15) [Section 2.3 A.13]

The permit includes a default emission factor of 1 ton VOC per rolling 12-month period (0.083 tons per calendar month) for the combined emissions of all above sources. This is a conservative emission factor per the facility owner. The use of this emission factor remains valid.

Three Dynamometers (ID Nos. IES-DYNA1, IES-DYNA2, and IES-DYNA3) [Section 2.3 A.14]

The permit includes a default emission factor of 0.2 ton VOC per rolling 12-month period (0.017 tons per calendar month) for the combined emissions of all above sources. This is a conservative emission factor per the facility owner. The use of this emission factor remains valid.

Insignificant Sources: Two Fire Pumps (ID Nos. IES-FP1 and IES-FP2) and One Emergency Generator (ID No. IES-EG)

The current permit does not include the monitoring method for VOC emissions from these engines. The following monitoring approach consisting of use of applicable AP-42 or NSPS emissions factors, as applicable, and engine operating hours will be included in Section 2.3 A.12:

$$\text{VOC emissions (tons/month)} = \{2.47\text{E-}03 \text{ lb/hp-hr} \times 225 \text{ hp} \times \text{D hrs /month}\} + \{2.47\text{E-}03 \text{ lb/hp-hr} \times 225 \text{ hp} \times \text{E hrs/month}\} + \{4.34\text{-}04 \text{ lb/hp-hr} \times 480 \text{ hp} \times \text{F hr/month}\}$$

Where:

D = hours of operation per month (ID No. IES-FP1)

E = hours of operation per month (ID No. IES-FP2)

F = hours of operation per month (ID No. IES-EG)

**6. NSPS, NESHAP, PSD, Attainment Status, 112(r), and CAM**

NSPS

The applicable NSPS for the facility sources have been listed in in Section 5.1 above. These PALs renewal requests do not change the status of the facility sources with respect to the NSPS.

NESHAP

The applicable NESHAPs for the facility sources have been listed in Section 5.1 above. These PALs renewal requests do not change the status of the facility sources with respect to NESHAPs.

PSD

The facility is a major stationary source for PSD. It has obtained PAL permits for VOCs, NOx, and GHGs. The PALs renewal request for NOx and GHGs do not trigger the major source (or major modification) requirements in PSD. Separately, the spray coating and assembly operations are subject to PSD with the BACT specified in the permit.

Attainment Status

Rowan County is currently in attainment or unclassifiable/attainment for all promulgated NAAQSs.

112(r)

This facility is not subject to Section 112(r) of the Clean Air Act.

CAM

Not applicable. The applicability to CAM is generally required to be addressed during the renewal or significant modification applications. This application is not a renewal of the Title V permit. It is a significant modification application solely to process the renewal of the existing VOCs PAL. Thus, CAM applicability does not need to be addressed here with this permit revision. Regardless of the above, the following paragraphs are copied (in double quotes) from the last permit revision (04625T37, 5/24/2021) application review on CAM status for the facility:

“40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. A Compliance Assurance Monitoring Plan review was conducted as part of the renewal of the permit in 2014. In the review, it was determined that for the emission sources that were currently installed that a CAM plan was not required at that time. Since 2014, the facility has added one diesel fired emergency engine, paint spray

booth with drying oven, and dry ice cleaning system. The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following three conditions are met:"

- "The unit is subject to any (non-exempt, e.g., pre-November 15, 1990, Section 111 or 112 standard) emission limitation or standard for the applicable regulated pollutant."
- "The unit uses any control device to achieve compliance with any such emission limitation or standard."
- "The unit's pre-control potential emission rate exceeds 100 percent of the amount required for a source to be classified as a major source; i.e., either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP."

"The emission sources installed since the last CAM review are uncontrolled therefore a CAM review is not needed at this time."

## **7. Facility Wide Air Toxics**

The facility is currently not subject to NC's air toxics program requirements in 02Q .0700. The current permit includes a limitation per 02Q .0711 for non-NESHAP subject sources, specifically that the owner/operator must obtain a permit to emit toxic air pollutants of acetaldehyde, acrolein, ammonia, benzene, benzo(a)pyrene, formaldehyde, methyl ethyl ketone, manganese, n-hexane, toluene, and xylene, if the facility wide emissions of any of these pollutants exceed the applicable toxic pollutant emission rates (TPERs). These PAL renewals do not change the facility status with respect to NC's air toxics requirements.

## **8. Facility Emissions Review**

Page 1 of this application review above includes the actual emissions for 2015 through 2019.

## **9. Public Notice/EPA and Affected State(s) Review**

With respect to the Title V procedures for public participation, pursuant to 15A NCAC 02Q .0521, a notice of the DRAFT Title V Permit will be placed on the NCDEQ website. The notice will provide for a 30-day comment period with an opportunity for a public hearing. Copies of the public notice will be sent to the persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of the permit application and the proposed permit (in this case, the draft permit) will be provided to EPA for their 45-day review. Also pursuant to 02Q .0522, a notice of the DRAFT Title V Permit will be provided to each affected State at or before the time notice provided to the public under 02Q .0521 above. A copy of the final permit will also be provided to the EPA upon issuance as per 02Q .0522.

The Title V procedures for public participation in 02Q .0521 conforms to the public participation requirement for PAL renewals in §51.166(w)(5) (i.e., 30-days period for submittal for public comments). Additionally, pursuant to this PAL provision and the significant modification procedure in §70.7(h)(6), the DAQ will respond in writing all public comments, whether received during the public comment period or raised during public hearing (if any) before taking a final action on the submitted PAL renewal application.

## **10. Stipulation Review**

The following changes were made to the Daimler Trucks North America LLC – Cleveland, Air Permit No. 04625T37:

**Table 10-1 Summary of Changes to Current Permit**

Old Page Air Quality Permit No. 04625T37	Old Section Air Quality Permit No. 04625T37	New Page Air Quality Permit No. 04625T38	New Section Air Quality Permit No. 04625T38	Description of Change(s)
Cover letter, insignificant activity attachment, and first page of permit				<p>Revised both the cover letter and the 1<sup>st</sup> page of the permit as per DAQ’s Title V Shell template. Regarding the cover letter, separated out the permit-contesting requirements as an attachment, as approved by the NC AG’s office. Included the NAICS code (in addition to SIC code) for the facility and a reminder for the renewal due date in the cover page.</p> <p>Removed the insignificant activity (IAs) list as an attachment to the cover letter per DAQ’s template and relocated it to Section 3 of the permit. Amended permit numbers and dates.</p>
2	Table of Contents	2	Table of Contents	Included both acronyms and IAs.
55	List of Acronyms	3	List of Acronyms	Relocated and revised per DAQ’s template.
6	Section 2.1 A Table	7	Section 2.1 A Table	Included applicable requirement under 02D .0530 for PALs for the pollutants VOC, NOx, and GHGs.
12	Section 2.1 B Table	12	Section 2.1 B table	Included applicable requirement under 02D .0530 for PALs for the pollutants VOC, NOx, and GHGs.
13	Section 2.1 B.4.f	14	Section 2.1 B.4.b	Renumbered this section and the remaining sections in this condition.
17	Section 2.1 D Table	17	Section 2.1 D Table	Included the state-enforceable only requirement in 02Q .0711.
19	Section 2.1 E Table	19	Section 2.1 E Table	Included the state-enforceable only requirement in 02Q .0711.
24	Section 2.2 B	23	Section 2.2 B	Included the missing source of “one pretreatment line” for the state-only air toxics requirement under 02Q .0711
37	Section 2.3 A.1	35	Section 2.3 A.1	Included the missing sources, fire pumps (IES-FP1 and IES-FP2) and emergency generator (IES-EG), in the VOC PAL permit.
39	Section 2.3 A.10	37	Section 2.3 A.10	Included new recordkeeping requirements for the operating hours for the fire pumps (ID Nos. IES-FP1 and IES-FP2) and the emergency generator (ID No. IES-EG).
39	Section 2.3 A.12	37	Section 2.3 A.12	Revised the formula to monitor VOC emissions from all natural gas and fuel oil-fired emissions sources.
-	-	38	Section 2.3 A.19 and 20	Included reporting requirements for both deviations and results of revalidation of scientific data.
41	Section 2.3 B.1	38	Section 2.3 B.1	Included the missing sources in the NOx PAL permit: fire pumps (IES-FP1 and IES-FP2), emergency generator (IES-EG), and three dynamometers (IES-

Old Page Air Quality Permit No. 04625T37	Old Section Air Quality Permit No. 04625T37	New Page Air Quality Permit No. 04625T38	New Section Air Quality Permit No. 04625T38	Description of Change(s)
				DYNA1, IES-DYNA2, and IES-DYNA3).
42	Section 2.3 B.9	39	Section 2.3 B.9	Included recordkeeping requirements for the operating hours for the fire pumps (ID Nos. IES-FP1 and IES-FP2) and the emergency generator (ID No. IES-EG).
42	Section 2.3 B.10	39	Section 2.3 B.10	Revised the formula to monitor NOx emissions from all natural gas and fuel oil-fired emissions sources.
-	-	40	Section 2.3 B.11	Included this new section for the NOx default emission factor (1.0 tons per rolling 12-month period) for three dynamometers combined.
-	-	40, 41	Section 2.3 B.17 and 18	Included new reporting requirements for both deviations and results of revalidation of scientific data.
43	Section 2.3 C.1	41	Section 2.3 C.1	Revised the GHGs PAL to state 61,262 tons per rolling 12-months period. Included the missing sources: three dynamometers (IES-DYNA1, IES-DYNA2, and IES-DYNA3).
43	Section 2.3 C.4	41	Section 2.3 C.4	Revised the GHGs PAL to state 61,262 tons per rolling 12-months period.
44	Section 2.3 C.10	42	Section 2.3 C.10	Revised the GHGs emissions factors and the GWP as per the application for all natural gas and fuel oil-fired sources.
-	-	42	Section 2.3 C.11	Included this new section for the GHGs default emission factor (3,078 tons per rolling 12-month period) for three dynamometers combined.
-	-	43	Section 2.3 C.17 and 18	Included new reporting requirements for both deviations and results of revalidation of scientific data.
37 through 45	Sections 2.3 A through C	35 through 43	Sections 2.3 A through C	Removed statements on violation of NSR throughout these PALs conditions for VOC, NOx, and GHGs.
-	-	44	Section 3	Relocated IA list from the cove letter attachment to this section.
46 through 54	Section 3	45 through 53	Section 4	Revised the General Conditions as per DAQ's Title V Shell.

## 11. Conclusions, Comments, and Recommendations

- The application does not involve any air pollution control device on a new or modified source at the facility, requiring review of a design or determination of its performance by a professional engineer licensed in NC. Thus, the requirement in 02Q .0112 “Applications Requiring Professional Engineer Seal” does not apply.
- The submitted PALs renewal application does not entail expansion of the existing facility; thus, the zoning consistency requirement in 02Q .0507(d)(1) does not apply.
- The draft permit was emailed to the Permittee for review on April 26, 2022. Ms. Dana Norvell (Trinity Consultants), on behalf of Daimler Trucks North America, emailed on May 3<sup>rd</sup> with a few comments as below:

Comment 1:

Add “See” to the table on page 7 and 12 to be consistent with others in the table and correct the equation on page 42 (item 10) for N<sub>2</sub>O, the constant in one place is not exactly the same as the others (rounded).

DAQ Response:

These changes will be made. No discussion is needed as the changes requested are editorial and minor.

- The draft permit was emailed to the Mooresville Regional Office (MRO) for review on April 26, 2022. Jennifer Manning on April 29<sup>th</sup> emailed that Karyn Kurek, the facility’s inspector, had no comments on their draft permit.
- The review engineer recommends issuing the revised Title V permit with the PAL renewed after the completion of both the public review (30-days) and EPA review (45-days) periods.