

FACT SHEET FOR: OP26R1-001**DATE:****DWEE ID:** 24371**Name of Source:** CNH Industrial American LLC**Source Classification:** Class I at time of issuance
Area Source of Hazardous Air Pollutants (HAPs)

Regulatory changes may supersede information in this document. If the source should add or change equipment or change processes such that a NESHAP or NSPS subpart becomes an applicable requirement, it is the source's obligation to comply with that subpart and applicable requirements whether or not they are identified in the associated permitting action or Title 129. Also note that the NESHAP and NSPS subparts are subject to change. Detailed information related to NESHAP and NSPS subparts can be found on the DWEE Air Toxics Notebook and DWEE NSPS Notebook located on the DWEE website (<https://dwee.nebraska.gov/>). The DWEE website can also be used to find other permit related and facility specific information that is not identified in this fact sheet.

The source is subject to and will comply with all applicable requirements found in Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those found at 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A (federally enforceable requirements); the State Implementation Plan (SIP) approved Title 129 as amended September 28, 2022 cited in this permit and denoted by an asterisk () are federally enforceable; and the Environmental Protection Act, Neb. Rev. Stat. §§ 81-1501 to 81-1532, and Nebraska Administrative Code Title 129 as amended June 28, 2026. When Title 129 as amended June 28, 2026 cited in this permit becomes SIP approved and federally enforceable it will supersede Title 129 as amended September 28, 2022.*

DESCRIPTION OF THE SOURCE OR ACTIVITY:

This operating permit OP26R1-001 approves the operation of a farm machinery and equipment manufacturing facility performing fabrication, assembly, and painting of metal parts. CNH Industrial America LLC; hereafter CNH) operates under the standard industrial classification (SIC) code 3523 (manufacturing farm machinery and equipment). Specific fabrication processes employed during manufacturing include shearing, punching, cutting, welding, and bending of sheet metal and plate steel. Machining operations are also performed on steel bar stock, castings, plate steel, and subassemblies. Welding of components is performed during fabrication and assembly operations. Paint coating operations, which normally occur after the fabrication and assembly operations, account for the majority of the air contaminant emissions at this source, which consist of both volatile organic compounds (VOC) and regulated hazardous air pollutants (HAP). Powder coating is also being utilized and does not exhibit nearly as many air emissions.

PERMIT HISTORY

Date Issued	Number	Status
05/12/1986	No Permit Required	Not active; superseded by CP02-003
09/16/1994	No Permit Required	Active
11/16/1994	No Permit Required (CP Application #CP94-0080)	Active
09/24/2002	CP02-003	Not active; superseded by CP07-0035
03/31/2003	CP02-0059	Not active; superseded by CP07-0035
07/29/2003	OPSP-0232	Not active; superseded by OPSPR1-0056
02/26/2004	CP03-0076	Not active; superseded by CP07-0035
03/15/2005	CP04-0056	Inactive; Emission unit removed in 2012
09/07/2007	CP07-0035	Active

08/07/2008	OPSPR1-0056	Not active; superseded by OP13R1-006
12/20/2011	CP11-032	Active
08/18/2016	OP13R1-006	Not active; superseded by OP21R1-007
01/03/2018	OP17M1-031	Not active; superseded by OP21R1-007
09/07/2021	OP21R1-007	Not active; superseded by OP26R1-001
02/09/2024	OP23M1-034	Not active; superseded by OP26R1-001
tbd	OP26R1-001	Active

PERMIT ACTION:

Permitted Emission Points are detailed in the table below:

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-7962			
N/a	EU-7962: E-Coat System, 99% transfer efficiency	None	None
Emission Point ID#: EP-7962-T			
N/a	EU-7962-T: E-Coat Feed Storage Tank, 99% transfer efficiency	None	None
Emission Point ID#: EP-7969			
N/a	EU-7969: Inspection and Preparation Booth	None	None
Emission Point ID#: EP-7975			
CE-7975: Dry fabric filters, with 98% control efficiency for particulate matter	EU-7975: Touch-up Booth #1	None	None
Emission Point ID#: EP-7982			
CE-7982: Dry fabric filters, with 98% control efficiency for particulate matter	EU-7982: Touch-up Booth #2	None	None
Emission Point ID#: EP-7988			
CE-7988: Downdraft water wash system (scrubber), with 99.5% control efficiency for particulate matter	EU-7988: Topcoat Booth No. 1, 50% transfer efficiency	None	None

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-7989			
CE-7989: Downdraft water wash system (scrubber), with 99.5% control efficiency for particulate matter	EU-7989: Topcoat Booth No. 2, 50% transfer efficiency	None	None
Emission Point ID#: EP-8907			
CE-8907: Dry fabric filters, with 98% control efficiency for particulate matter	EU-8907: Index Paint System – Booth No. 1 (Primer)	None	None
Emission Point ID#: EP-8908			
CE-8908: Dry fabric filters, with 98% control efficiency for particulate matter	EU-8908: Index Paint System – Booth No. 2 (Topcoat)	None	None
Emission Point ID#: EP-8919			
CE-8919: Dry fabric filters, with 98% control efficiency	EU-8919: Powder Coat Booth #1, with a reclamation system, with 90% reclamation efficiency	None	None
Emission Point ID#: EP-8920			
CE-8920: Dry fabric filters, with 98% control efficiency	EU-8920: Powder Coat Booth #2, with a reclamation system, with 90% reclamation efficiency	None	None
Emission Point ID#: EP-8921			
CE-8921: Dry fabric filters, with 98% control efficiency	EU-8921: Powder Coat Booth #3, with a reclamation system, with 90% reclamation efficiency	None	None
Emission Point ID#: EP-8922			
CE-8922: Dry fabric filters, with 98% control efficiency	EU-8922: Powder Coat Manual Booth, with a reclamation system, with 90% reclamation efficiency	None	None

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Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-2153			
N/a	EU-2153: Building 2 – Air Makeup Unit, maximum permitted capacity: 11.7 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-7956			
N/a	EU-7956: Index Line – boiler, maximum permitted capacity: 5.5 MMBtu/hr, natural gas fired	None	None
Emission Point ID#: EP-7960			
N/a	EU-7960: Pretreatment Boiler, maximum permitted capacity: 12.5 MMBtu/hr, permitted fuel type: natural gas, installed July 29, 2003	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01*</u> ; Subpart A; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05*</u> ; Title 129, Chapter 12, Section <u>001.06</u>	None
Emission Point ID#: EP-7965			
N/a	EU-7965: E-Coat Oven, maximum permitted capacity: 10.5 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-7972			
N/a	EU-7972: Topcoat Oven, maximum permitted capacity: 12.0 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-7988			
N/a	EU-7988: Topcoat Booth No. 1’s Air Makeup Unit, maximum permitted capacity: 10.85 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-7989			
N/a	EU-7989: Topcoat Booth No. 2’s Air Makeup Unit, maximum permitted capacity: 10.85 MMBtu/hr, permitted fuel type: natural gas	None	None

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Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-8909			
N/a	EU-8909: Index Paint System – Dryoff Oven, maximum permitted capacity: 8.0 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-8910			
N/a	EU-8910: Index Paint System – Cure Oven, maximum permitted capacity: 14.0 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-8939			
N/a	EU-8939: Powder Coat Hot Water Boiler #1 (used unit), maximum permitted capacity: 5 MMBtu/hr, permitted fuel type: natural gas	None	None
Emission Point ID#: EP-8940			
CE-8940: Afterburner	EU-8914: Burn-off oven	None	None
Emission Point ID#: EP-8932			
CE-8932: Afterburner	EU-8932: Burn-off oven	None	None
Emission Point ID#: EP-2081			
N/A	EU-2081: Emergency generator manufactured March 1972; maximum permitted capacity: 0.36 MMBtu/hr; permitted fuel type: propane	None	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section <u>002.01</u> *; Title 129, Chapter 13, Section <u>002.01</u>
			40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78</u> *; Title 129, Chapter 13, Section <u>002.79</u>
Emission Point ID#: EP-2082			
N/A	EU-2082: Emergency generator; manufactured 2014; maximum permitted capacity: 35 kW; 64 HP; permitted fuel type: natural gas	40 CFR Part 60, NSPS Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section <u>002.01</u> *; Title 129, Chapter 13, Section <u>002.01</u>

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		40 CFR Part 60, NSPS Subpart JJJJ; Title 129, Chapter 12, Section <u>001.81</u> *; Title 129, Chapter 12, Section <u>001.82</u>	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78</u> *; Title 129, Chapter 13, Section <u>002.79</u>
Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-2112			
N/A	EU-2112: Emergency generator: manufactured 2015; maximum permitted capacity: 1.26 MMBtu/hr; 190 HP; permitted fuel type: natural gas	40 CFR Part 60, NSPS Subpart A; Title 129, Chapter 12, Section <u>001.01</u> *; Title 129, Chapter 12, Section <u>001.01</u>	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section <u>002.01</u> *; Title 129, Chapter 13, Section <u>002.01</u>
		40 CFR Part 60, NSPS Subpart JJJJ; Title 129, Chapter 12, Section <u>001.81</u> *; Title 129, Chapter 12, Section <u>001.82</u>	40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78</u> *; Title 129, Chapter 13, Section <u>002.79</u>
Emission Point ID#: EP-2328			
N/A	EU-2328: Emergency generator; manufactured March 2007, maximum permitted capacity 0.09 MMBtu/hr; permitted fuel type: natural gas	None	40 CFR Part 63, NESHAP Subpart A; Title 129, Chapter 13, Section <u>002.01</u> *; Title 129, Chapter 13, Section <u>002.01</u>
			40 CFR Part 63, NESHAP Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78</u> *; Title 129, Chapter 13, Section <u>002.79</u>

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

The following table summarizes the potential and actual emissions:

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions^[2] (tons/year)
Particulate Matter (PM)	18.11	--
Particulate Matter less than or equal to 10 microns (PM ₁₀)	14.30	0.001
Particulate Matter less than or equal to 2.5 microns (PM _{2.5})	13.58	0.001
Sulfur Dioxide (SO ₂)	0.81	0.017
Oxides of Nitrogen (NO _x)	104.61	2.754
Carbon Monoxide (CO)	86.53	2.313
Volatile Organic Compounds (VOCs)	313.75	18.121
Greenhouse Gases (GHGs) ^[1]	124,331	3,304
Carbon Dioxide Equivalents (CO ₂ e) ^[1]	125,005	3.304
Hazardous Air Pollutants (HAPs)		
Greatest Individual HAP(s)		
1-Butanol	7.98	Not reported
Naphthalene	2.84	Not reported
n-Hexane	1.86	Not reported
All Other HAPs	0.34	Not reported
Total HAPs	13.02	Not reported

^[1] The U.S. Supreme Court ruled in 2014 that greenhouse gases (GHGs) may not be used to determine whether a source is a Class I (major) source. Utility Air Regulatory Group v. EPA, 134 S.Ct. 2427 (2014). Therefore, potential emissions of GHGs will not be used to determine a source's operating permit classification at this time. However, GHGs are still regulated air pollutants so GHGs and CO₂e will continue to be calculated and reported in this fact sheet.

^[2] Actual Emissions are from (2025) air emissions inventory.

SUPPLEMENTAL INFORMATION:

Title 129, Chapter 4*; Title 129, Chapter 4 - Prevention of Significant Deterioration (PSD) of Air Quality

This source is an existing major source with respect to PSD, with potential controlled emissions of 313.75 tons per year VOC from the surface coating operations. Previous construction permits issued to the facility were for minor modifications of an existing major PSD facility. A surface coating facility is major for PSD when the potential controlled emissions are greater than 250 tons/yr of VOC.

Title 129, Chapter 12*; Title 129, Chapter 12 - New Source Performance Standards (NSPS) and Emission Limits for Existing Sources

The following NSPS apply to the source:

Subpart A – General Provision:

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.01*; Title 129, Chapter 12, Section 001.01, applies to the owner or operator of any stationary source that is subject to any standard, limitation, prohibition, or federally enforceable requirement established pursuant to Part 60.

Subpart Dc – Small Industrial-Commercial-Institutional Steam Generating Units:

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.05* Title 129, Chapter 12, Section 001.06, applies to the owner and operator of small industrial, commercial, institutional steam generating units. The Pretreatment Boiler (Emission Unit # 7960) is subject to NSPS Subpart Dc. This NSPS subpart covers units constructed after June 9, 1989, that have a heat input rating between 10 MMBtu/hr and 100 MMBtu/hr. Emission Unit #7960 is rated at 12.5 MMBtu/hr and was installed July 29, 2003. The boiler will be fired exclusively on natural gas; therefore, the source is required only to measure and record fuel use and comply with certain reporting requirements {40 CFR 60.48c(g), (h), and (i)}. EU-7956 Index Line boiler has a maximum heat input rating of 5.5 MMBtu/hr. and EU-8939 Power Coat Hot Water Boiler #1 has a maximum heat input rating of 8.4 MMBtu/hr. For subpart Dc applicability, the maximum heat input capacity threshold must be between 10-100 MMBtu/hr for subpart Dc applicability and EU-7956 and EU-8939 each have maximum heat input rating is below 10 MMBtu/hr. Therefore, neither emission unit is subject to subpart Dc.

NSPS Subpart JJJJ- Stationary Spark Ignition Internal Combustion Engine (SI ICE):

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.81*; Title 129, Chapter 12, Section 001.82, and applies to stationary spark ignition internal combustion engines that commence construction after June 12, 2006, where the engines are manufactured:

- On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 hp;
- On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 hp and less than 1,350 hp;
- On or after July 1, 2008, for engines with a maximum engine power less than 500 hp; or
- On or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 kW (25 hp).

For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Emission Units #2081 and 2328 are not subject to NSPS Subpart JJJJ, because the engines were manufactured and installed prior to 2008, and have not been modified or reconstructed. Emission Unit #2082 is subject to NSPS Subpart JJJJ since it was constructed after January 1, 2009. In July 2015, Emission Unit #2112 changed from a 51.43 hp diesel engine (CI ICE) to a 190 hp natural gas engine (SI ICE) due to an engine replacement. Since the new 190 hp engine was constructed after January 1, 2009, it is subject to NSPS Subpart JJJJ. This subpart includes limitations on NO_x, CO, and VOC. Demonstration of compliance with these emission limits is based on the manufacturer's certification, and proper maintenance and operation of the RICE in accordance to the manufacturer's written instructions. If CNH does not comply with the manufacturer's instruction for proper maintenance and operations, then the engine(s) is subject to requirements for non-certified engines in this subpart, including testing of the engine(s).

On May 4, 2016, the U.S. Court of Appeals for District of Columbia Circuit issued a decision in the case of *Delaware v. EPA* [785 F.3d 1] which affected NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ. In the court decision, paragraphs §60.4243(d)(2)(ii)-(iii) of NSPS Subpart JJJJ were vacated.

The following NSPS appear to apply to the source but do not:

Subpart D – Fossil-fuel-fired steam generator for which construction is commenced after August 17, 1971:

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.02*; Title 129, Chapter 12, Section 001.03, applies to the owner and operator of fossil-fuel-fired steam generator for which

construction is commenced after August 17, 1971 and is capable of firing fossil fuel at a heat input rate greater than 250 MMBtu/hr. Emission unit (EU) 7956 Index Line-boiler, has maximum heat input rating of 5.5 MMBtu/hr and Water Boiler #1 has maximum heat input rating of 8.4 MMBtu/hr and were installed August 2012 and August 2008, respectively, after the August 17, 1971 applicability date. EU-7956 and EU-8939 each have a maximum heat input rating of less than 250 MMBtu/hr.

Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units:

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.04*; Title 129, Chapter 12, Section 001.04, applies to steam generating units with a design rate greater than 100 MMBtu/hr, installed after June 19, 1984. EU-7956 Index Line-boiler, has maximum heat input rating of 5.5 MMBtu/hr and EU-8939 Powder Coat Hot Water Boiler #1 has maximum heat input rating of 8.4 MMBtu/hr and were installed August 2012 and August 2008, respectively. EU-7956 and EU-8939, each, have a maximum heat input rating of less than 100 MMBtu/hr.

Subpart CCCC/DDDD - Commercial and Industrial Solid Waste Incineration Units:

This subpart, adopted by reference in Title 129, Chapter 12, Sections 001.76* and 001.77*; Title 129, Chapter 12, Sections 001.77 and 001.78, applies to the owner and operator of commercial and industrial solid waste incineration (CISWI) units. Subpart CCCC applies to units that commence construction after June 4, 2010, or commenced reconstruction or modification after August 7, 2013. Subpart DDDD applies to units that commence before or on the applicability dates of the Subpart CCCC. Subpart DDDD is a set of guidelines to states for developing state plans to regulate existing CISWI units including model rules. DWEE has adopted the model rules specified in Subpart DDDD as its state plan. The Burn-Off Ovens (Emission Units # 8940 and 8932) are not subject to NSPS, Subpart CCCC or DDDD. This NSPS has a specific exemption for burn-off ovens for rack, part and drum reclamation units (burn-off oven definition in 40 CFR 60.2265 and 60.2875). A rack reclamation unit is a unit that burns coatings racks used to hold small items for application of a coating. A rack reclamation unit burns the coating overspray off the rack so that the rack can be reused. A part reclamation unit is a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused. A drum reclamation unit means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused. Burn-Off Ovens (Emission Units # 8940, and 8932) will be operated as both a rack and part reclamation unit and are therefore exempt from this subpart.

Subpart IIII – Stationary Compression Ignition Internal Combustion Engine (CI ICE):

This subpart, adopted by reference in Title 129, Chapter 12, Section 001.80*; Title 129, Chapter 12, Section 001.81, applies to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) with displacement of less than 30 liters per cylinder that commenced construction, modification or reconstruction after July 11, 2005. The diesel CI RICE was replaced in 2015 with a natural gas SI RICE. Therefore, no engines are subject to NSPS Subpart IIII, at the time of issuance of this permit.

On May 4, 2016, the U.S. Court of Appeals for District of Columbia Circuit issued a decision in the case of *Delaware v. EPA* [785 F.3d 1] which affected NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ. In the court decision, paragraphs §60.4211(f)(2)(ii)-(iii) of NSPS Subpart IIII were vacated.

Title 129, Chapter 13, Sections 002* and 003*; Title 129, Chapter 13, Sections 002 and 003 - National Emission Standards for Hazardous Air Pollutants (NESHAP)

Subpart A – General Provision:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.01*; Title 129, Chapter 13, Section 002.01, applies to the owner or operator of any stationary source that emits or has the potential to emit any hazardous air pollutant listed in or pursuant to section 112(b) of the Act; and is subject to any standard, limitation, prohibition, or federally enforceable requirement established pursuant to Part 63.

This source is subject to this subpart because it is subject to one or more subparts contained in Part 63 and emits hazardous air pollutants listed in section 112(b) of the Act.

Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.78*; Title 129, Chapter 13, Section 002.79, applies to new and existing stationary reciprocating internal combustion engines (RICE) located at a major or area source of HAPs excluding stationary RICE being tested at a stationary RICE test cell/stand. Engines 2081, 2328, 2082, and 2112 are subject to this subpart (§63.6590).

Emission Unit	Subpart ZZZZ category	Citations	Requirements
2081	Existing SI ICE, <500 hp, emergency, at a major HAP source	§63.6602, Table 2c Item 6; §63.6625(j)	Change oil and filter every 500 hours of operation or annually, whichever comes first;
2328	Existing SI ICE, <500 hp, emergency, 2-stroke lean burn, at a major HAP source		Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
2082 and 2112	New emergency RICE <500 hp, at a major HAP source	§63.6590(c)(6)	Comply with NSPS Subpart JJJJ requirements.

On May 4, 2016, the U.S. Court of Appeals for District of Columbia Circuit issued a decision in the case of *Delaware v. EPA* [785 F.3d 1] which affected NSPS Subparts IIII and JJJJ, and NESHAP Subpart ZZZZ. In the court decision, paragraphs §63.6640(f)(2)(ii)-(iii) of NESHAP Subpart ZZZZ were vacated.

The following NESHAP appear to apply to the source but do not:

Subpart DDDDD – Industrial, Commercial and Institutional Boilers and Process Heaters at Major Sources of HAP:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.80*; Title 129, Chapter 13, Section 002.81, applies to boilers and process heaters that are located at major HAP sources. Emission Units 7956, 7960, and 8915 are not subject to this subpart, because these emission units are no longer located at a major source of HAPs, invoking the EPA “Once in, always in” rule revocation, the source is now minor or an area source of HAPs, therefore not subject to subpart DDDDD. (Please see NESHAP subpart MMMM below for detailed information on the EPA revocation of the “once in, always in” policy).

Subpart MMMM – Miscellaneous Metal Parts and Products:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.65*; Title 129, Chapter 13, Section 002.66, applies to surface coating of miscellaneous metal parts and products located at a major HAP source, which uses 250 gallons/yr or more of coatings that contain organic HAP. Surface coating includes surface preparation, cleaning, coating mixing, and storage. While the source’s potential HAPs emissions are estimated to be below the major source thresholds of 10 tons/yr of individual HAP and 25 tons/yr of combined HAPs, the permit fact sheet attachment application indicates that the source is subject to 40 CFR 63, Subpart MMMM because it uses 250 gallons/yr or more of coatings that contain organic HAP. Based on information provided by the source, a change to a significant HAP decrease occurred in 2009 when the use of a chemical containing high concentrations of HAP in the strip tank process was discontinued, as was the strip tank process altogether. The lower HAP emissions are not therefore a result

of compliance with the “emission rate without add-on controls option”, but elimination of a HAP-containing material. Thus, there would be no expectation that reclassification of the source as an Area Source would lead to emissions of HAP in excess of Major Source thresholds. Based on information provided by the source, CNH is no longer a Major Source of HAPs. Under the EPA policy, if a source failed to have federally enforceable permit limits restricting their potential to emit (PTE) to less than the major source thresholds for HAPs when the first compliance date of a NESHAP occurred, that source had to remain subject to the standard and be considered a major source regardless of the emissions profile. On January 25, 2018, the EPA withdrew this policy and issued guidance which reversed the once-in-always-in policy; the rule was published in Subpart A, November 19, 2020. CNH is no longer subject to the requirements of 40 CFR 63 Subpart M.

Subpart JJJJJ—National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers:

This subpart, adopted by reference in Title 129, Chapter 13, Section 002.101*; Title 129, Chapter 13, Section 002.103, applies to boilers at area sources of HAPs. Boilers which combust gaseous fuels and only fire solid or liquid fuels during periods of gas curtailment, gas supply interruption, startups, or periodic testing are defined as gas-fired boilers by this subpart and are not subject, provided diesel is not combusted in these emission units. The boilers EU-7956 Index line boiler, EU-7960 Pretreatment boiler and EU-8939 Powder coat hot water heater are permitted to combust only natural gas fuel. In the future if CNH is permitted for diesel combustion, then they would become subject to Subpart JJJJJ if diesel fuel is used in a manner that is not consistent with the definition of gas-fired boilers in JJJJJ. CNH must determine the applicability of this subpart and be aware that applicability may change if fuel usage changes.

Title 129, Chapter 14*; Title 129, Chapter 14 – Incinerator Requirements

In accordance with Title 129, Chapter 14, Section 002*; Title 129, Chapter 14, Section 002, particulate matter emissions from each of the burn-off oven (incinerator) are limited to 0.10 grains per dry standard cubic feet of exhaust flow. It is not expected the source will violate this requirement based on performance test data of similar commercially designed units with afterburner controls. Operational, monitoring, and recordkeeping requirements from Title 129, Chapter 14 have been included in Condition III.(C) of the operating permit.

Title 129, Chapter 15*; Title 129, Chapter 15 - Compliance

Process Weight Rate

Title 129, Chapter 15, Section 001.01*; Title 129, Chapter 15, Section 001.01, limits PM (filterable) emissions to the amounts shown in Table 15-1 during any one hour. These process weight rate limits, which are based on throughput of the emission units, vary as throughputs change. Since the potential to emit for each emission point is less than the process weight rate limitations, these PM limitations were not included in Condition III of this permit.

Particulate Emissions from Combustion Sources

All the PM emission points subject to Title 129, Chapter 15, Section 001.02*; Title 129, Chapter 15, Section 001.02, limitations are in compliance with those limitations, as the potential to emit for each emission point is less than the limitations. Therefore, these PM limitations were not included in Condition III of this permit.

Opacity Limitations from Emission Units

Specific Condition I.(J) specifies that no person shall cause or allow emissions, from any source, which has an opacity equal to or greater than twenty percent (20%). Opacity must be determined using an EPA-approved method or recorded by a continuous opacity monitoring system which has been operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 and 001.05E*; Chapter 15, Sections 001.05 and 001.05E; (Title 129, Chapter 15, Section 001.04)*; (Title

129, Chapter 15, Section 001.04). Therefore, while not specifically stated in Condition III, this requirement is still applicable to all emission units at the source.

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

III.(A) Specific Conditions for Surface Coating and Associated Operations

- (A)(2)(a) The VOC and Organic HAPs for all of the material usage in the surface coating operations are limited for each consecutive 12-month period. The VOC limitation is from Construction Permit CP07-0035 issued September 7, 2007 to maintain PSD minor modification determinations from previous construction permits. CNH is a minor, or Area Source of HAPs [see Title 129, Chapter 13*; Title 129, Chapter 13 - National Emission Standards for Hazardous Air Pollutants (NESHAP) discussion for CNH's non-applicability to Subpart MMMM]. For CNH to remain an Area Source, HAP emission limitations are required. Based on past CNH HAP emissions a combined group limit for HAPs (for all the coating, solvent, and other chemical usage in the emission units—this does not include VOC emissions from the fuel combustion) is set at ≤ 8.5 tpy of any individual HAP and ≤ 20 tpy of total HAPs combined. The combined group HAP limit is below 10 tpy of any individual HAP and below 25 tpy of total HAPs to allow CNH a cushion, to keep HAP emissions below the major source thresholds. CNH demonstrates compliance with VOC and Organic HAP limits by calculating the monthly emissions, based on the chemicals used in the surface coating operations. The PM (filterable) and opacity limitations are from Title 129, Chapter 15 Sections 001.01* and 001.04*; Title 129, Chapter 15 Sections 001.01 and 001.04, which CNH demonstrates compliance with the use of control devices (dry fabric filter or scrubber) on the applicable emission units.
- (A)(3)(a)-(b) CNH requested throughput limitations on Emission Units 7988, 7989, 8907, and 8908 to restrict uncontrolled particulate matter emissions to avoid CAM requirements, which DWEE included in the operating permit per Title 129, Chapter 6, Section 003.11* Title 129, Chapter 6, Section 003.11.
- (A)(3)(c) The equation to calculate the monthly and consecutive 12-month actual VOC emissions is identified, which is from Construction Permit CP07-0035 and is used to demonstrate compliance with the limitations necessary to assure determination of PSD minor modification. Ten of the paint booths have particulate matter control devices: two use downdraft water wash systems (scrubbers) and eight use dry fabric filters, which are required by Construction Permit CP07-0035 and by DWEE per Title 129, Chapter 6, Section 003.03*; Title 129, Chapter 6, Section 003.03 for units with control devices but were not identified in the construction permit. The control devices must be operated when the associated paint booth is operational. The control devices must be installed and maintained properly. The operational and maintenance of the control devices is required by Construction Permit CP07-0035 (issued September 7, 2007) and by DWEE per Title 129, Chapter 6, Section 003.03*; Title 129, Chapter 6, Section 003.03 for units with control devices but were not identified in the construction permit. This condition also establishes limitations and/or operational and monitoring requirements for individual combined hazardous air pollutants (HAPs), and total combined HAPs for all painting operations (liquid and powder coat [only if it contains HAP(s)]) in order to limit total potential to emit (PTE) below the major source thresholds. In accordance with EPA guidance, environmental advisory board (EAB) decisions, and Title 129, mass-balance processes such as painting are capable of continuous compliance with tons/year limitations because materials in directly correlate with emissions out. Therefore, compliance with the limitation is demonstrated via

monthly actual emissions calculations. For the source to remain a minor, or area source, of HAPs the source is required to maintain ≤ 10.0 tpy of any individual HAP and ≤ 25.0 tpy of combination of total HAPs. The major contributor of the source's HAP emissions is from the surface coating and associated operations. These surface coating and associated operations have the potential to experience the most variability yearly in HAP emissions. The ≤ 8.5 tpy limit of any individual HAP was selected to allow the source to maintain their current and potentially future modest changes in surface coating and associated operations. The ≤ 8.5 tpy limit of any individual HAP allows for ≤ 1.0 tpy of HAP emissions PTE for other current source HAP emitting activities; and the remaining ≤ 0.5 tpy HAP PTE cushion that allows for future HAP emitting emission unit addition(s) and/or activities. These HAPs contribute to ≤ 10 tpy limit of any individual HAP. The ≤ 20.0 tpy limit of any combination of total HAPs, uses the same reasoning and rationale as the ≤ 8.5 tpy of limit of any individual HAP. By having the ≤ 10.0 tpy of any individual HAP and ≤ 25.0 tpy of combination of total HAP limits, the source reduces extra HAP and HAP related recordkeeping.

- (A)(3)(e)(i-iv) The permit requirements for scrubber are based on construction permit CP07-0035. Pervious permit referenced the requirements but did not spell them out. The requirements are spelled out now for clarity and ease of use.
- (A)(4) The permit has recordkeeping and reporting requirements that are used to demonstrate compliance with the VOC and HAP limitations, and operational requirements of the particulate control devices. The records for the particulate control devices demonstrate compliance with PM (filterable) and opacity limits. The recordkeeping and reporting requirements are per by Construction Permit CP07-0035, and by DWEE per Title 129, Chapter 6, Section 003.03*; Chapter 6, Section 003.03 for the requirements to demonstrate compliance with the requirements that are in Condition III.(A)(3) that were not in the construction permit.

III.(B) Requirements for External Combustion Units

- (B)(1) EU-8939 (8.44 MMBtu/hr powder coat hot water boiler) was removed from service in January 2024. EU-8939 (5 MMBtu/hr powder coat hot water boiler) replaced EU-8939 in January 2024.
- (B)(2) The external combustion units have PM (filterable) and opacity limitations per Title 129 Chapter 15 Sections 001.02* and 001.04*; Chapter 15 Sections 001.02 and 001.04, respectively. These combustion units are expected to meet the limitations because they combust natural gas fuel only, so performance testing is not required. NSPS Subpart Dc do not have emission limitations for units that combust natural gas only.
- (B)(3) The pretreatment boiler is required to have a dedicated, non-resettable fuel meter to track its fuel usage per NSPS, Subpart Dc and Construction Permit CP07-0035. The external fuel combustion units listed in Condition III.(B)(1) are restricted to only natural gas fuel combustion per Construction Permit CP07-0035 issued September 7, 2007 and by DWEE per Title 129, Chapter 6, Section 003.03*; Title 129, Chapter 6, Section 003.03 for units with control devices but were not identified in the construction permit. Emission Unit 7960 must comply with any additional applicable operational and monitoring requirements of NSPS Subpart Dc
- (B)(4) This condition has the recordkeeping requirements that include when routine maintenance and preventative actions are performed, when equipment failures occur, and records and notifications as required by the applicable NSPS Subpart Dc Emission Unit 7960. The other emission units listed in Condition III.(B)(1) must comply with the recordkeeping and reporting requirements in Condition II. CNH will need to document that the units listed in

Condition III.(B)(1) are using only natural gas, to demonstrate compliance with Condition III.(B)(3)(b).

III.(C) Requirements for Burn-Off Ovens

- (C)(1) EU-8914 Burn-off oven was removed in October 2024. EU-8940 Burn-off oven replaced EU-8914 in October 2024 as like for like. The Burn-off oven name was changed in the like for like replacement and the existing construction permits CP07-0035 and CP11-032 apply. The DWEE document number for the notification of this change is 20240230018.
- (C)(2) The burn-off ovens are subject to a PM (filterable) emission limitation per Title 129, Chapter 14, Section 002*; Title 129, Chapter 14, Section 002 and an Opacity limitation per Title 129, Chapter 15, Section 001.04*; Title 129, Chapter 15, Section 001.04. Burn-off ovens are considered incinerators and are subject to Title 129, Chapter 14*; Title 129, Chapter 14 requirements.
- (C)(3) The burn-off ovens are subject to the operating and monitoring requirements of Title 129, Chapter 14, Sections 004*, 005*, and 006*; Chapter 14, Sections 004, 005, and 006. Additionally, the materials incinerated in the burn-off oven are limited to coatings on metal parts and paint line fixtures; otherwise, they may be subject to a NSPS requirement (NSPS Subpart CCCC or DDDD for commercial and industrial solid waste incineration units). DWEE is requiring visible emissions surveys to be conducted on each burn-off oven when the unit is operational to demonstrate compliance with Title 129, Chapter 15, Section 001.04* Title 129, Chapter 15, Section 001.04.
- (C)(4) This condition has the recordkeeping requirements that include routine maintenance and preventative actions that are performed on the burn-off oven, what, if any, corrective actions or repairs were completed, and records of material incinerated in the burn-off oven. This recordkeeping is required by Construction Permits CP07-0035 issued September 7, 2007, and CP11-032 issued December 20, 2011. Additionally, CNH must keep records of the visible emissions surveys to demonstrate compliance with Title 129, Chapter 15, Section 001.04*; Title 129, Chapter 15, Section 001.04.

III.(D) Requirements for Reciprocating Internal Combustion Engines

- (D)(2) Each RICE is subject to the PM (filterable) and opacity limitations per Title 129, Chapter 15, Sections 001.02* and 001.04* Title 129, Chapter 15, Sections 001.02 and 001.04, respectively. Compliance demonstration for PM (filterable) and opacity limitations is determined by the restriction of the fuel to natural gas. Emission Units 2082 and 2112 are subject to NO_x, VOC, NO_x+ HC, and/or CO limitations per NSPS Subpart JJJJ. HC stands for hydrocarbons. The operational and monitoring requirements of NSPS Subpart JJJJ demonstrate compliance with the associated emission limits. There are currently no emission limitations required by NESHAP Subpart ZZZZ for any of these engines.
- (D)(3) Each RICE must comply with the operational and monitoring requirements of NESHAP Subpart ZZZZ. Emission Units 2082 and 2112 must comply with the operational and monitoring requirements per NSPS Subpart JJJJ. DWEE is requiring each RICE to combust only natural gas to demonstrate compliance with PM (filterable) and opacity limitations. Condition III.(D)(3)(a) includes the specific operating and monitoring requirements from NESHAP Subpart ZZZZ, that CNH specifically requested to be listed in the operating permit. Condition III.(D)(3)(b) includes the specific operating and monitoring requirements from NSPS Subpart JJJJ, that CNH specifically requested to be listed in the operating permit.
- (D)(4) Each RICE must comply with the recordkeeping and reporting requirements of NESHAP Subpart ZZZZ. Units 2082 and 2112 must comply with the recordkeeping and reporting requirements per NSPS Subpart JJJJ. CNH will need to document that the units listed in

Condition III.(D)(1) are using only natural gas, to demonstrate compliance with Condition III.(D)(3)(c). Condition III.(D)(4)(a) includes the specific recordkeeping and reporting requirements from NESHAP Subpart ZZZZ, that CNH specifically requested to be listed in the operating permit. Condition III.(D)(4)(b) includes the specific recordkeeping and reporting requirements from NSPS Subpart JJJJ, that CNH specifically requested to be listed in the operating permit.

Insignificant Activities

The following table contains a description of insignificant activities at the source at the time of permit issuance, in accordance with operating permit application OP26R1-001, received January 14, 2026, including any supporting information received prior to issuance of the permit:

Equipment ID	Unit Description^[1]	Insignificance Criteria
2106	Air Make-Up Unit, 1.05 MMBtu/hr maximum capacity, natural gas fired, located in the burn-off oven vestibule, installed in 2012.	< 10 MMBtu/hr heat input
2014-2017, 2022, 2024	Air Makeup Units, six units, 6.3 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
2105	Boiler Room - 0.05 MMBtu/hr heater, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Building 2 - Four radiant heaters, 0.15 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
2186	Building 2 SE – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2191	Building 3 E Center – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2190	Building 3 North – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2187	Buildidng 4 E – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Building 5- Two radiant heaters, 0.25 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
N/A	Building 5- Six radiant heaters, 0.2 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
2138	Building 5 – 2.9 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2144	Building 5 – 5.9 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2189	Building 5 Center – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2188	Building 5 E – 5.3 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2137	Building 6 – 2.9 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Building 6 - 0.2 MMBtu/hr radiant heater, natural gas fired	< 10 MMBtu/hr heat input

Equipment ID	Unit Description^[1]	Insignificance Criteria
2227	Building 6 – 2.05 MMBtu/hr Air Makeup Unit, natural gas fired	< 10 MMBtu/hr heat input
2228	Building 6 – 2.05 MMBtu/hr Air Makeup Unit, natural gas fired	< 10 MMBtu/hr heat input
2011	Building 6 North - 2.5 MMBtu/hr heater, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
2219	Building 8 – 3.3 MMBtu/hr Air Makeup Unit, natural gas fired	< 10 MMBtu/hr heat input
2104	Door 19 - 0.05 MMBtu/hr heater, natural gas fired	< 10 MMBtu/hr heat input
6319, 6320, and 6321	Hay Equipment Manufacturing Building – Three Air Makeup Units, 4.93 MMBtu/hr each, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Hay Equipment Manufacturing Building– Four radiant heater burners, 0.24 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
N/A	Hay Equipment Manufacturing Building – 0.36 MMBtu/hr Rooftop Air Makeup Unit, natural gas fired	< 10 MMBtu/hr heat input
N/A	Loading Rack – tube heaters, consisting of two 0.2 MMBtu/hr burners, natural gas fired.	< 10 MMBtu/hr heat input
7926	Mix Room - 0.1 MMBtu/hr heater, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Office – 0.15 MMBtu/hr roof top heater, natural gas fired	< 10 MMBtu/hr heat input
N/A	Office – 0.18 MMBtu/hr roof top heater, natural gas fired	< 10 MMBtu/hr heat input
N/A	Office – 0.4 MMBtu/hr roof top heater, natural gas fired	< 10 MMBtu/hr heat input
2141	Office – 1.50 MMBtu/hr boiler (hot water heater), natural gas fired, used for comfort heat, installed in November 2015.	< 10 MMBtu/hr heat input
2327	Powder Coat Environmental Room – 0.5 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Powder Coat Environmental Room – 2.592 MMBtu/hr Air Makeup Unit, natural gas fired, used for comfort heat	< 10 MMBtu/hr heat input
N/A	Shipping Building – Two radiant heaters, 0.25 MMBtu/hr each, natural gas combustion	< 10 MMBtu/hr heat input
N/A	Shipping Building – Six radiant heaters, 0.2 MMBtu/hr each, natural gas combustion	< 10 MMBtu/hr heat input
N/A	Small Parts Building – Six radiant heaters, 0.2 MMBtu/hr each, natural gas fired	< 10 MMBtu/hr heat input
8917	3.0 MMBtu/hr Powder Coat Dryoff Oven, natural gas fired	< 10 MMBtu/hr heat input
8918	8.0 MMBtu/hr Cure Oven (two burners at 4 MMBtu/hr each)	< 10 MMBtu/hr heat input

Equipment ID	Unit Description^[1]	Insignificance Criteria
N/A	Two solvent recovery units, installed in 2014	HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I
00T2	10,000 gallon capacity storage tank, storing Diesel Fuel	Vapor pressure < 0.5 psia; < 1 million gallons throughput
00T4	10,000 gallon capacity storage tank, storing ethylene glycol	HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I
N/A	Welders (219) – source wide	Welding operations with HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I
N/A	Laser cutters – source wide	Laser cutting operations with HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I
N/A	Grinders (15) – source wide	Grinding operations with HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I
00NP1	Plant Wide Maintenance Parts Washer	HAP emissions less than reporting levels in Title 129 Appendix I* and Appendix I

^[1] All emission units were constructed after February 26, 1974.

Although not required, DWEE recommends that the permittee submit a written notification to DWEE if there are additions or changes to the list of insignificant activities identified above, containing the following suggested information:

- A brief description of the addition or change within the permitted source;
- The date on which the addition or change occurred;
- Any change in potential emissions; and
- The criteria, as defined in the Operating Permit Application Forms, used to determine that the addition or change to the list of insignificant activities qualifies as insignificant.

This notification helps the DWEE keep a current list on file for compliance purposes. In addition, because emissions from insignificant activities must be counted toward major source (Class I) applicability, it is important to know if a source makes additions or changes to the list of insignificant activities that would cause a change in potential to emit at the source, and ultimately whether the source has a change in classification (i.e., Class I vs. Class II).

The following terms and conditions from the construction permit(s) listed were not incorporated into this permit, or have been modified as discussed below:

Permit Number and Issuance Date	Specific Condition	Reason Modified or Not Included In Operating Permit
#CP07-0035 September 7, 2007	III.(A)(4)	Removed; this construction permit (CP) condition is no longer applicable because the source is no longer a major source of HAPs, and therefore not subject to NESHAP Subpart M. The CP/NESHAP Subpart M Organic HAP limit is replaced with individual and total

		Organic HAP limits to keep the source an area source of HAPs.
#CP07-0035 September 7, 2007	III.(A)(5)(h) III.(A)(5)(i)	Removed; this CP condition is no longer applicable because the source is no longer a major source of HAPs, and therefore not subject to NESHAP Subpart Mmmm.
#CP07-0035 September 7, 2007	III.(B)(5)(c)	Removed; this CP condition is no longer applicable because the source is no longer a major source of HAPs, and therefore not subject to NESHAP Subpart DDDDD.

CNH Industrial America, LLC
Grand Island, NE
Facility-Wide PTE Summary

		Surface Coating Operations (TPY)	Powder Coat Booths (TPY)	Index System Natural Gas Combustion (TPY)	Burn Off Ovens Natural Gas Combustion (TPY)	Emergency Generators (TPY)	Insignificant Activity		TOTALS (TPY)
							Combustion (TPY)	Welding (TPY)	
Criteria Pollutants	PM (total)	4.02	1.80	3.46	0.39	0.33	4.28	3.83	18.11
	PM ₁₀	1.88	0.14	3.46	0.39	0.33	4.28	3.83	14.30
	PM _{2.5}	1.15	0.14	3.46	0.39	0.33	4.28	3.83	13.58
	SO ₂	-	-	0.27	0.20	0.00	0.34	-	0.81
	NO _x	-	-	45.47	1.99	0.82	56.33	-	104.61
	CO	-	-	38.20	0.20	0.81	47.32	-	86.53
	VOC	307.65	-	2.50	0.39	0.11	3.10	-	313.75
TOTAL HAP:									13.02
Individual Organic HAPs	1,1,2,2-Tetrachloroethane	-	-	-	-	0.00	-	-	0.00
	1-Butanol	7.98	-	-	-	-	-	-	7.98
	1,3-Butadiene	-	-	-	-	0.00031	-	-	0.00
	Acetaldehyde	-	-	-	-	0.00131	-	-	0.00
	Acrolein	-	-	-	-	0.00123	-	-	0.00
	Benzene	-	-	0.00095	0.00004	0.00074	0.00118	-	0.00
	Dichlorobenzene	-	-	0.00055	0.00002	-	0.00068	-	0.00
	Formaldehyde	-	-	0.03411	0.00132	0.00960	0.04225	-	0.09
	n-Hexane	-	-	0.81854	0.03169	-	1.01396	-	1.86
	Methanol	-	-	-	-	0.00143	-	-	0.00
	Methylene Chloride	-	-	-	-	0.00002	-	-	0.00
	Naphthalene	2.83	-	0.00028	0.00001	-	0.00034	-	2.84
	PAH	-	-	-	-	0.00007	-	-	0.00
	Polycyclic Organic Matter	-	-	0.00004	0.00000	-	0.00005	-	0.00
Individual Metal HAPs	Toluene	-	-	0.00155	0.00006	0.00026	0.00192	-	0.00
	Xylene	-	-	-	-	0.00009	-	-	0.00
	Arsenic Compounds	-	-	0.00009	0.00000	-	0.00011	-	0.00
	Beryllium Compounds	-	-	0.00001	0.00000	-	0.00001	-	0.00
	Cadmium Compounds	-	-	0.00050	0.00002	-	0.00062	-	0.00
	Chromium Compounds	-	-	0.00064	0.00002	-	0.00079	0.00074	0.00
	Cobalt Compounds	-	-	0.00004	0.00000	-	0.00005	-	0.00
	Lead Compounds	-	-	0.00023	0.00001	-	0.00028	-	0.00
	Manganese Compounds	-	-	0.00017	0.00001	-	0.00021	0.23411	0.23
	Mercury Compounds	-	-	0.00012	0.00000	-	0.00015	-	0.00
Greenhouse Gases	Nickel Compounds	-	-	0.00095	0.00004	-	0.00118	0.00074	0.00
	Selenium Compounds	-	-	0.00001	0.00000	-	0.00001	-	0.00
	Methane	-	-	1.045918	0.04049	0.10768	1.29562	-	2.49
	Nitrous Oxide	-	-	1.000444	0.03873	-	1.23928	-	2.28
	Carbon Dioxide	-	-	54569.647059	2112.70588	51.49980	67597.31294	-	124,331.17
	CO ₂ equivalents	-	-	54864.050305	2124.10393	54.51488	67962.00044	-	125,004.67

Surface Coating Operations - Particulate Matter (PM) and Volatile Organic Compounds (VOC)

Emission Point IDs: 7962, 7962-T, 7988, 7989, 7975, 7982, 7969, 8907, 8908, and 4814

Calculations in Surface Coating Operations Table:

$$\begin{aligned}\text{Throughput (lbs/yr)} &= [\text{Throughput (gal/yr)}] \times [\text{Density (lb/gal)}] \\ \text{Emission Factor (lb/gal)} &= [\text{Throughput (gal/yr)} \times [\text{Solids Content (lb/gal)} \times [1 - \text{Transfer Efficiency}]] \\ \text{Uncontrolled Emissions (TPY) for PM} &= [\text{Throughput (gal/yr)}] \times [\text{Emission factor (lb/gal)}] / [2000 \text{ lb/ton}] \\ \text{Controlled Emissions (TPY)} &= [\text{Uncontrolled Emissions (TPY)}] \times [1 - \text{Control Efficiency}] \\ \text{Emissions (TPY) for VOC} &= [\text{Throughput (gal/yr)}] \times [\text{VOC Content (lb/gal)}] / [2000 \text{ lb/ton}] \\ \text{Emissions (TPY) for HAPs} &= [\text{Throughput (gal/yr)}] \times [\text{Density (lb/gal)}] \times [\text{HAP content (wt \%)}] / [2000 \text{ lb/ton}]\end{aligned}$$

Surface Coating Material Usage

Emission Point Names & Types: Emission Point IDs: Control Type:		E-Coat System Units 7962 and 7962-T		Topcoat (Acrylic) Paint Booths Units 7988 and 7989		Touchup Booths Units 7975 and 7982		Inspection and Preparation Booth Unit 7969	Index Paint Booth System Units 8907 and 8908		SURFACE COATING PTE (TPY)
		None		Wet Scrubber (99.5%)		Fabric Filter (98%)		None	Fabric Filter (98%)		
		Solvent/ Additive	Coating	Solvent/ Additive	Coating	Solvent/ Additive	Coating	Solvent/ Additive	Solvent/ Additive	Coating	
Coating Product Usage:	Throughput (gal/yr) ³	1,200	75,000	1,000	64,900	100	2,950	380	15,350	76,900	
	Density (lb/gal)	8.85	3.73	7.45	8.75	6.84	12.772	6.84	6.59	9.27	
	Throughput (lb/yr)	10,620	279,750	7,446	567,662	684	37,677	2,599	101,157	713,013	
	Solids Content (%)	0%	99.196%	0%	70%	0%	72%	0%	0%	56%	
	VOC (%)	100%	0.804%	77%	30%	100%	28%	100%	100%	44%	
Pollutant											
PM (total) ¹	Solids content (lb/gal)		3.7		6.15		9.172			5.20	
	Transfer Efficiency (%)		99%		50%		50%			50%	
	Emission Factor (lb/gal)		0.04		3.08		4.59			2.60	
	Uncontrolled Emissions (tpy)		1.39		99.79		6.76			99.98	
	Control Efficiency (%)		0%		99.5%		98%			98%	
	Emissions (TPY)	-	1.39	-	0.50	-	0.14	-	-	2.00	4.02
PM ₁₀	PM ₁₀ wt% of PM Total:		46.7%		46.7%		46.7%			46.7%	
	Emissions (TPY)	-	0.65	-	0.23	-	0.06	-		0.93	1.88
PM _{2.5}	PM _{2.5} wt% of PM Total:		28.6%		28.6%		28.6%			28.6%	
	Emissions (TPY)	-	0.40	-	0.14	-	0.04	-		0.57	1.15
VOC	VOC Content (lb/gal)	8.85	0.03	5.76	2.60	6.84	3.6	6.84	6.59	4.07	
	Emissions (TPY)	5.31	1.13	2.88	84.25	0.34	5.31	1.30	50.58	156.55	307.65

¹PM (total) is presumed to be that particulate that is NOT transferred to the item being coated, Solids content of coating x (1 - transfer efficiency) = PM (total)

²PM₁₀ and PM_{2.5} particle distribution estimated using Guidance obtained from AP-42, Appendix B.1, Section 4.2.2.8, "Automobile and Light Duty Truck Surface Coating Operations: Automobile Spray Booths (Water Based Enamel)". Published particle distributions were measured post-control measures, therefore particle distribution percentages applied post-control.

³Topcoat (Acrylic) Paint Booths and Index Paint Booth Systems both originally restricted to 42,500 and 62,000 gal/yr throughputs, respectively, to avoid CAM requirements. Actual and current paint characteristics differ from those on which original PTE was based and therefore allow higher throughputs for PTE estimate and still avoid 100 TPY CAM requirement threshold. PTE is calculated using these higher throughputs.

Surface Coating Operations - Hazardous Air Pollutants (HAPs)
Emission Point IDs: 7962, 7962-T, 7988, 7989, 7975, 7982, 7969, 8907, 8908, and 4814

Surface Coating Material Usage

Emission Point Names & Types: Emission Point IDs: Control Type:		E-Coat System Units 7962 and 7962-T		Topcoat (Acrylic) Paint Booths Units 7988 and 7989		Touchup Booths Units 7975 and 7982		Inspection and Preparation Booth Unit 7969	Index Paint Booth System Units 8907 and 8908		SURFACE COATING HAP PTE (TPY)	
				Wet Scrubber (99.5%)		Fabric Filter (98%)			Fabric Filter (98%)			
		Solvent/ Additive	Coating	Solvent/ Additive	Coating	Solvent/ Additive	Coating	Solvent/ Additive	Solvent/ Additive	Coating		
Coating Product Usage:	Throughput (gal/yr)	1,200	75,000	1,000	64,900	100	2,950	380	15,350	76,900		
	Density (lb/gal)	8.85	3.73	7.45	8.75	6.84	12.77	6.84	6.59	9.27		
	Throughput (lb/yr)	10,620	279,750	7,446	567,662	684	37,677	2,599	101,157	713,013		
Pollutant - TOTAL HAPs		0.00	0.00	2.83	7.98	0.00	0.00	0.00	0.00	0.00	10.81	
Pollutant - Individual HAPs												
1-Butanol	HAP Content (wt%)	0	0	0	2.81%	0	0	0	0	0	7.98	1-Butanol
	Emissions (TPY)	-	-	-	7.98	-	-	-	-	-		
Naphthalene	HAP Content (wt%)	0	0	0.010	0	0	0	0	0	0	2.83	Naphthalene
	Emissions (TPY)	-	-	2.83	-	-	-	-	-	-		

Powder Coat Booths - Particulate Matter (PM)

Emission Point IDs: 8919, 8920, 8921, and 8922

Emission Point Names and Types:	Automatic Powder Booths Units 8919, 8920 and 8921	Manual Powder Booth Unit 8922		
Emission Point ID:	8920 and 8921	Unit 8922		
Number of booths:	3	1		
Number of guns per booth:	8	6		
Maximum paint throughput per gun (grains/min-gun):	400	400		
Maximum gun utilization (min/hr) ¹ :	60	60		
Unit conversion (grains/lb):	7000	7000		
Gun transfer efficiency:	60%	60%		
Overspray floor recovery ² :	0%	0%		
Final (Safety) filter efficiency:	99%	99%		
Portion of the paint that is PM ₁₀ :	7.9%	7.9%		
Maximum operating hours (hrs/yr):	8760	8760		
Potential Paint Throughput (lb/hr):	82.29	20.57		
Potential Paint Overspray (lb/hr):	32.91	8.23		
Potential Paint PM emissions (filterable) (lb/hr):	0.33	0.08	TOTALS (TPY)	
Potential Paint PM ₁₀ emissions (lb/hr):	0.0260	0.0065		
Potential Paint PM _{2.5} emissions (lb/hr):	0.0260	0.0065		
Potential Paint PM emissions (TPY):	1.442	0.360	1.802	PM
Potential Paint PM ₁₀ emissions (TPY):	0.114	0.028	0.142	PM₁₀
Potential Paint PM _{2.5} emissions (TPY):	0.114	0.028	0.142	PM_{2.5}

¹ Paint guns are typically utilized less than 60 min/hr; emissions based upon 60 min/hr usage are worst case

² Powder coat paint is unavoidably oversprayed to floor. This paint is typically recovered and reused. For worst case emission estimate, recovery of this overspray not considered.

Index System Combustion Sources

Emission Point IDs: 2153, 7956, 7960, 7965, 7972, 7988, 7989, 8909, 8910, 8916, and 8939

Unit #	Design Capacity (MMBtu/hr)	Unit #	Design Capacity (MMBtu/hr)
2153	11.70	7989	10.85
7956	5.50	8909	8.00
7960	12.50	8910	14.00
7965	10.50	8939	5.00
7972	12.00	8916	5.00
7988	10.85		

Design Capacity, TOTAL: 105.90 MMBTU/hr 0.1038 MMSCF/hr
Natural Gas Heating Value: 1020 Btu/Scf
PTE Operating Hours: 8760 hrs

Index System Combustion Emissions						
	Pollutant	Emission Factor (lb/MMSCF) ¹	Hourly Emissions (lb/hr)	PTE (TPY)		
Criteria Pollutants	PM	7.6	0.79	3.46		
	PM ₁₀	7.6	0.79	3.46		
	PM _{2.5}	7.6	0.79	3.46		
	SO ₂	0.6	0.06	0.27		
	NO _x	100	10.38	45.47		
	CO	84	8.72	38.20		
	VOC	5.5	0.57	2.50		
Total HAPs:				0.8588		
Individual Organic HAPs	Benzene	0.0021	0.000218029	0.00095		
	Dichlorobenzene	0.0012	0.000124588	0.00055		
	Formaldehyde	0.075	0.007786765	0.03411		
	n-Hexane	1.8	0.186882353	0.81854		
	Naphthalene	0.000610	6.33324E-05	0.00028		
	Polycyclic Organic Matter	0.0000882	9.15724E-06	0.00004		
	Toluene	0.0034	0.000353	0.00155		
Individual Metal HAPs	Arsenic Compounds	0.0002	2.07647E-05	0.00009		
	Beryllium Compounds	0.000012	1.24588E-06	0.00001		
	Cadmium Compounds	0.0011	0.000114206	0.00050		
	Chromium Compounds	0.0014	0.000145353	0.00064		
	Cobalt Compounds	0.000084	8.72118E-06	0.00004		
	Lead Compounds	0.0005	5.19118E-05	0.00023		
	Manganese Compound	0.00038	3.94529E-05	0.00017		
	Mercury Compounds	0.00026	2.69941E-05	0.00012		
	Nickel Compounds	0.0021	0.000218029	0.00095		
	Selenium Compounds	0.000024	2.49176E-06	0.00001		
Greenhouse Gases	Methane	2.3	0.238794118	1.04592	GWP ²	29.28571059
	Nitrous Oxide	2.2	0.228411765	1.00044		265.1175353
	Carbon Dioxide	120000	12458.82353	54569.64706	1	54569.64706
	CO ₂ equivalents					54864.0503

¹Emission factors for natural gas combustion from AP-42 Chapter 1, Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4

²Global warming potential (GWP) for carbon dioxide equivalents taken from EPA Greenhouse Gas Equivalencies Calculator.

Burn-Off Ovens Combustion and VOC Emission Sources

Emission Point IDs: 8932 and 8940

Natural Gas Heating Value: 1020 Btu/Scf
PTE Operating Hours: 8760 hrs

Burn-Off Ovens Combustion AND VOC Burn-off Emissions								
Emission Point ID #:		Burn-Off Oven 8940		Burn-Off Oven 8932				
Design Burn-Off Rate of Volatile Organics:		75 lb/hr		75 lb/hr				
		657,000 lb/yr		657,000 lb/yr				
Design Rate of Burner:		2.05 MMBtu/hr		2.05 MMBtu/hr				
		0.00201 MMScf/hr		0.00201 MMScf/hr				
Pollutant	Emission Factor (lb/MMSCF) ³	Hourly Emissions (lb/hr) ¹	PTE (TPY)	Hourly Emissions (lb/hr) ¹	PTE (TPY)	Total PTE (TPY)		
Criteria Pollutants	PM ²	0.045	0.20	0.045	0.20	0.39		
	PM ₁₀ ²	0.045	0.20	0.045	0.20	0.39		
	PM _{2.5} ²	0.045	0.20	0.045	0.20	0.39		
	SO ₂	0.023	0.10	0.023	0.10	0.20		
	NO _x	0.227	0.99	0.227	0.99	1.99		
	CO	0.023	0.10	0.023	0.10	0.20		
	VOC	0.045	0.20	0.045	0.20	0.39		
Total HAPs:			0.0166		0.0166	0.0332		
Individual Organic HAPs	Benzene	0.0021	4.22059E-06	0.00001849	4.22059E-06	0.00001849	0.0000370	
	Dichlorobenzene	0.0012	2.41176E-06	0.00001056	2.41176E-06	0.00001056	0.0000211	
	Formaldehyde	0.075	0.000150735	0.00066022	0.000150735	0.00066022	0.0013204	
	n-Hexane	1.8	0.003617647	0.01584529	0.003617647	0.01584529	0.0316906	
	Naphthalene	0.000610	1.22598E-06	0.00000537	1.22598E-06	0.00000537	0.0000107	
	Polycyclic Organic Matter	0.0000882	1.77265E-07	0.00000078	1.77265E-07	0.00000078	0.0000016	
	Toluene	0.0034	6.83333E-06	0.00002993	6.83333E-06	0.00002993	0.0000599	
Individual Metal HAPs	Arsenic Compounds	0.0002	4.01961E-07	0.00000176	4.01961E-07	0.00000176	0.0000035	
	Beryllium Compounds	0.000012	2.41176E-08	0.00000011	2.41176E-08	0.00000011	0.0000002	
	Cadmium Compounds	0.0011	2.21078E-06	0.00000968	2.21078E-06	0.00000968	0.0000194	
	Chromium Compounds	0.0014	2.81373E-06	0.00001232	2.81373E-06	0.00001232	0.0000246	
	Cobalt Compounds	0.000084	1.68824E-07	0.00000074	1.68824E-07	0.00000074	0.0000015	
	Lead Compounds	0.0005	1.0049E-06	0.00000440	1.0049E-06	0.00000440	0.0000088	
	Manganese Compound	0.00038	7.63725E-07	0.00000335	7.63725E-07	0.00000335	0.0000067	
	Mercury Compounds	0.00026	5.22549E-07	0.00000229	5.22549E-07	0.00000229	0.0000046	
	Nickel Compounds	0.0021	4.22059E-06	0.00001849	4.22059E-06	0.00001849	0.0000370	
	Selenium Compounds	0.000024	4.82353E-08	0.00000021	4.82353E-08	0.00000021	0.0000004	
Greenhouse Gases	Methane	2.3	0.004622549	0.02024676	0.004622549	0.02024676	0.0404935	GWP ⁴
	Nitrous Oxide	2.2	0.004421569	0.01936647	0.004421569	0.01936647	0.0387329	CO ₂ e
	Carbon Dioxide	120000	241.1764706	1056.35294118	241.1764706	1056.35294118	2112.7058824	
	CO ₂ equivalents							

¹ Emission Rates (lb/hr) for Burn-Off Ovens provided by Manufacturer Data Sheets and include volatile organics burned off in oven AND products of Natural Gas combustion of the burners. #8912 Oven Manufacturer Data Sheet source: Pollution Control Products Co., Controlled Pyrolysis Furnaces with J-121 Burners, May 27, 1994 ; #8940 (formerly #8914) and #8932 Oven Manufacturer Data Sheet source: Heat-Cleaning Oven Process Description (submitted for 2011 construction permit).

² All PM (filterable) emissions assumed to be PM_{2.5}.

³ HAP Emissions Factors for Natural Gas Combustion from AP-42 Chapter 1.4, Tables 1.4-3 and 1.4-4

⁴ Global warming potential (GWP) for carbon dioxide equivalents taken from EPA Greenhouse Gas Equivalencies Calculator.

Emergency Generators

Emission Point IDs: 2081, 2082, 2328, and 2111

Hp conversion to Btu/hr: 2542.5 Btu/hr per Hp
PTE Operating Hours: 500 hrs

	Emergency Generator RICE Emissions															
	Generator Location:		Shipping Bldg		Front Office		Above Paint Office			Hay Tools Addition						
	Generator Make/Model:		Onan 30 kW 1562D		Milbank 35 kW, 64 Hp MG3520831 WIN		Mililbank 12048031S, 190 Hp			Cummins Power Generation 35GGFD- 5813223						
	Engine Type:		SI RICE		4S RB SI RICE		4S RB SI RICE			4S RB SI RICE						
	Fuel:		Propane ²		Natural Gas		Natural Gas			Natural Gas						
	Engine Horsepower:		Not available		64		190			Not available						
	Max Fuel Consumption ¹ :		0.36 MMBtu/hr ⁴		0.16272 MMBtu/hr ¹		1.26 MMBtu/hr ⁴			0.09 MMBtu/hr ⁴						
	Emission Point ID #:		2081		2082			2328			2328					
	Emission Factor (lb/MMBtu) ³	Hourly Emissions (lb/hr) ⁵	PTE (TPY)	Emission Factor (g/Hp-hr) ⁶	Hourly Emissions (lb/hr) ⁵	PTE (TPY)	Emission Factor (g/Hp-hr) ⁶	Hourly Emissions (lb/hr) ⁵	PTE (TPY)	Hourly Emissions (lb/hr) ⁵	PTE (TPY)					
	Pollutant											Total PTE				
Criteria Pollutants	PM		0.22	0.06		0.27	0.07		0.76	0.19	0.05	0.0125	0.325	PM		
	PM ₁₀		0.22	0.06		0.27	0.07		0.76	0.19	0.05	0.0125	0.325	PM ₁₀		
	PM _{2.5}		0.22	0.06		0.27	0.07		0.76	0.19	0.05	0.0125	0.325	PM _{2.5}		
	SO ₂	0.000588	0.0002	0.0001		0.0001	0.0000		0.0007	0.0002	0.0001	0.0000	0.000	SO ₂		
	NO _x	2.27	0.8172	0.20	10	1.4061	0.35	2	0.8378	0.21	0.2043	0.05	0.816	NO _x		
	CO	3.51	1.2636	0.32	387	0.5711	0.00	4	1.6755	0.42	0.3159	0.08	0.814	CO		
	VOC	0.0296	0.0107	0.00	see footnote 6	0.0048	0.00	1	0.4189	0.10	0.0027	0.00	0.109	VOC		
Total HAPs:			0.0029			0.0013			0.0101		0.0007	0.015	Total HAP			
Individual Organic HAPs	1,1,2,2-Tetrachloroethane	0.0000253	0.0000	0.00000		0.0000	0.00000		0.0000	0.00001	0.0000	0.00000	0.00001	1,1,2,2-Tetrachloroethane		
	1,3-Butadiene	0.000663	0.0002	0.00006		0.0001	0.00003		0.0008	0.00021	0.0001	0.00001	0.00031	1,3-Butadiene		
	Acetaldehyde	0.0002790	0.0010	0.00025		0.0005	0.00011		0.0035	0.00088	0.0003	0.00006	0.00131	Acetaldehyde		
	Acrolein	0.00263	0.0009	0.00024		0.0004	0.00011		0.0033	0.00083	0.0002	0.00006	0.00123	Acrolein		
	Benzene	0.00158	0.0006	0.00014		0.0003	0.00006		0.0020	0.00050	0.0001	0.00004	0.00074	Benzene		
	Formaldehyde	0.0205	0.0074	0.00185		0.0033	0.00083		0.0258	0.00646	0.0018	0.00046	0.00960	Formaldehyde		
	Methanol	0.00306	0.0011	0.00028		0.0005	0.00012		0.0039	0.00096	0.0003	0.00007	0.00143	Methanol		
	Methylene Chloride	0.0000412	0.0000	0.00000		0.0000	0.00000		0.0001	0.00001	0.0000	0.00000	0.00002	Methylene Chloride		
	PAH	0.000141	0.0001	0.00001		0.0000	0.00001		0.0002	0.00004	0.0000	0.00000	0.00007	PAH		
	Toluene	0.000558	0.0002	0.00005		0.0001	0.00002		0.0007	0.00018	0.0001	0.00001	0.00026	Toluene		
Xylene	0.000195	0.0001	0.00002		0.0000	0.00001		0.0002	0.00006	0.0000	0.00000	0.00009	Xylene			
Green-house Gases																
	Methane	0.23	0.0828	0.02070		0.0374	0.00936		0.2898	0.07245	0.0207	0.00518	0.10768	Methane	GWP'	CO ₂ e
	Carbon Dioxide	110	39.6000	9.90000		17.8992	4.47480		138.6000	34.65000	9.9000	2.47500	51.49980	Carbon Dioxide	1	51.4998
	CO ₂ equivalents												CO ₂ equivalents		54.514879	

¹ Maximum engine fuel consumption not provided by manufacturer documentation, horsepower converted to maximum fuel consumption using the following conversion factor from AP-42 Appendix A Conversion Factor Table: 2542.5 Btu/hr per Horsepower

² AP-42 Chapter 3 emission factors for Stationary Internal Combustion Sources include only Natural Gas, Gasoline, and Diesel-fueled engine emission factor data. Chapter 1 emission factors for External Combustion Sources, which includes data for propane- and butane-fueled combustion emission factors assumes natural gas combustion emission factors for PM, CO & TOC for propane-fueled combustion. Therefore, the factors published in Chapter 3 for natural gas combustion in Table 3.2-3 are assumed appropriate for the propane-fired generator and used in this table.

³ Criteria Pollutant and HAP Emissions Factors for Natural Gas Combustion from AP-42 Chapter 3.2, Table 3.2-3

⁴ Maximum fuel consumption provided by manufacturer documentation.

⁵ PM Hourly Emissions = Emission Limit set by permit

⁶ NSPS Subpart JJJJ Emission Limit for Emergency Engines; Emission standards for engines < 130 hp specified in terms of NOx + HC. For consistency the VOC portion is estimated using the AP-42 hourly emission rate calculation and this amount is deducted from the 10 g/hp-hr calculated rate for NOx + HC to assure VOC is accounted for and NOT double-counted.

⁷Global warming potential (GWP) for carbon dioxide equivalents taken from EPA Greenhouse Gas Equivalencies Calculator

Insignificant Activities - Combustion

Emission Point IDs: 2014, 2015, 2016, 2017, 2022, 2024, 2105, 2106, 2137, 2138, 2144, 2186, 2187, 2188, 2189, 2190, 2191, 2227 + un-numbered points

Unit #	Description	Design Capacity (MMBtu/hr)	Unit #	Description	Design Capacity (MMBtu/hr)
2011	Bldg 6 North Air makeup unit, comfort heat	2.5	2228	Bldg 6 Air makeup unit	2.05
2014	Air makeup unit	6.3	2327	Powder Coat Environmental Rm, Air makeup unit, comfort heat	0.5
2015	Air makeup unit	6.3	4814	Strip tank heater	0.5
2016	Air makeup unit	6.3	6319	Hay Equipment Mfg Bldg Air makeup unit, comfort heat	4.93
2017	Air makeup unit	6.3	6320	Hay Equipment Mfg Bldg Air makeup unit, comfort heat	4.93
2022	Air makeup unit	6.3	6321	Hay Equipment Mfg Bldg Air makeup unit, comfort heat	4.93
2024	Air makeup unit	6.3	7926	Mix Rm Heater, comfort heat	0.1
2104	Door 19 heater	0.05	8917	Powder Coat Dryoff Oven	3
2105	Boiler rm heater, comfort heat	0.05	8918	Cure oven - 2 burners, 4 MMBtu/hr ea	8
2106	Air makeup unit	1.05	N/A	Bldg 2 - 4 radiant heaters; 0.15 MMBtu/hr ea	0.6
2137	Bldg 6 Air makeup unit, comfort heat	2.9	N/A	Bldg 4 - 2 radiant heaters, 0.25 MMBtu/hr ea	0.5
2138	Bldg 5 Air makeup unit, comfort heat	2.9	N/A	Bldg 5 - 6 radiant heaters, 0.2 MMBtu/hr ea	1.2
2141	Office - Boiler (hot water heater)	1.5	N/A	Bldg 6 radiant heater	0.2
2144	Bldg 5 Air makeup unit, comfort heat	5.9	N/A	Hay Equipment Mfg Bldg 4 radiant heaters, 0.24 MMBtu/hr	0.96
2186	Bldg 2 SE Air makeup unit, comfort heat	5.3	N/A	Hay Equipment Mfg Bldg Rooftop Air makeup unit	0.36
2187	Bldg 4E Air makeup unit, comfort heat	5.3	N/A	Loading Rack Tube Heaters, 2 @ 0.2 MMBth/hr ea	0.4
2188	Bldg 5E Air makeup unit, comfort heat	5.3	N/A	Office Rooftop Heater	0.15
2189	Bldg 5 Center Air makeup unit, comfort heat	5.3	N/A	Office Rooftop Heater	0.18
2190	Bldg 3 North Air makeup unit, comfort heat	5.3	N/A	Office Rooftop Heater	0.4
2191	Bldg 3E Center, Air makeup unit, comfort heat	5.3	N/A	Powder Coat Environmental Rm, Air makeup unit, comfort heat	2.592
2219	Bldg 8 Air makeup unit	3.3	N/A	Shipping Bldg - 2 radiant heaters, 0.25 ea	0.5
2227	Bldg 6 Air makeup unit	2.05	N/A	Shipping Bldg - 6 radiant heaters, 0.2 ea	1.2
			N/A	Small Parts Bldg - 6 radiant heaters, 0.2 ea	1.2

Design Capacity, TOTAL: 131.18 MMBTU/hr 0.1286 MMSCF/hr
Natural Gas Heating Value: 1020 Btu/Scf
PTE Operating Hours: 8760 hrs

Insignificant Activities Combustion Emissions					
	Pollutant	Emission Factor (lb/MMSCF) ¹	Hourly Emissions (lb/hr)	PTE (TPY)	
Criteria Pollutants	PM	7.6	0.98		4.28
	PM ₁₀	7.6	0.98		4.28
	PM _{2.5}	7.6	0.98		4.28
	SO ₂	0.6	0.08		0.34
	NO _x	100	12.86		56.33
	CO	84	10.80		47.32
	VOC	5.5	0.71		3.10
Total HAPs:					1.0638
Individual Organic HAPs	Benzene	0.0021	0.000270081		0.00118
	Dichlorobenzene	0.0012	0.000154332		0.00068
	Formaldehyde	0.075	0.009645735		0.04225
	n-Hexane	1.8	0.231497647		1.01396
	Naphthalene	0.000610	7.8452E-05		0.00034
	Polycyclic Organic Matter	0.0000882	1.13434E-05		0.00005
	Toluene	0.0034	0.000437273		0.00192
Individual Metal HAPs	Arsenic Compounds	0.0002	2.5722E-05		0.00011
	Beryllium Compounds	0.000012	1.54332E-06		0.00001
	Cadmium Compounds	0.0011	0.000141471		0.00062
	Chromium Compounds	0.0014	0.000180054		0.00079
	Cobalt Compounds	0.000084	1.08032E-05		0.00005
	Lead Compounds	0.0005	6.43049E-05		0.00028
	Manganese Compounds	0.00038	4.88717E-05		0.00021
	Mercury Compounds	0.00026	3.34385E-05		0.00015
	Nickel Compounds	0.0021	0.000270081		0.00118
Greenhouse Gases	Selenium Compounds	0.000024	3.08664E-06		0.00001
	Methane	2.3	0.295802549	1.29562	28
	Nitrous Oxide	2.2	0.282941569	1.23928	265
	Carbon Dioxide	120000	15433.17647	67597.31294	1
	CO ₂ equivalents				67962.0004

¹Emission factors for natural gas combustion from AP-42 Chapter 1, Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4

²Global warming potential (GWP) for carbon dioxide equivalents taken from EPA Greenhouse Gas Equivalencies Calculator.

Insignificant Activities - Welding

WELDING DETAILS		
Wire Used:	15.28	lb wire/robot-hr
Robots:	11	
Welders:	219	
Maximum operating hours (hrs/yr):	8760	
Hourly Wire Use:	168.08	
Annual Wire Use:	1,472,380.80	

Pollutant	Emission Factor ² (lb/1000 lb electrode)	Hourly emissions (lb/hr)	Annual Emissions (lb/yr)	Annual Emissions (TPY)
PM	5.2	0.874016	7656.3802	3.83
PM ₁₀	5.2	0.874016	7656.3802	3.83
PM _{2.5} ¹	5.2	0.874016	7656.3802	3.83
Chromium Compounds	0.001	0.00016808	1.4723808	0.00074
Manganese Compounds	0.318	0.05344944	468.21709	0.23411
Nickel Compounds	0.001	0.00016808	1.4723808	0.00074

¹ Assumes PM_{2.5} = PM₁₀ = PM emission rate.

² Emission Factors from FIRE 6.25 SCC 30905254 E70 electrode gas metal arc welding

DETERMINATION OF AVERAGE PAINT COMPOSITIONS USED IN PAINT BOOTHS USING ACTUAL 2020 PAINT USAGE

Index Paint Booth												Spectrophotometer Reduction (Percentile) COC1582	Catalyst G041170	Residual A-0351 B007						
On-Site SPATULAS						Red SPATULAS									Yellow SPATULAS					
Overall		VOC Usage		VOC Usage		Overall		VOC Usage		VOC Usage					Overall		VOC Usage		VOC Usage	
2020 Usage (lb/ft)	Density (lb/gal)	(lb VOC/lb Product)	(lb VOC/lb Product)	Solids in Paint (lb/ft)	(lb/ft)	2020 Usage (lb/ft)	Density (lb/gal)	(lb VOC/lb Product)	(lb VOC/lb Product)	Solids in Paint (lb/ft)	(lb/ft)	2020 Usage (lb/ft)			Density (lb/gal)	(lb VOC/lb Product)	(lb VOC/lb Product)	Solids in Paint (lb/ft)	Density (lb/gal)	
JAN	189	0.92	1761.48	0.43	757.44	1004.04	0.7	8.88	772.56	0.49	378.55	394.01	103	0.66	994.98	0.4	389.99	6.59		
FEB	139	0.92	1227.65	0.43	557.62	1305.65	0.7	8.88	1185.52	0.49	775.86	812.65	31	0.66	299.46	0.4	119.0	17.98		
MAR	278	0.92	2500.36	0.43	1124.11	1478.85	140	8.88	1243.2	0.49	605.17	634.03	131	0.66	1245.46	0.4	506.18	79.18		
APR	47	0.92	438.64	0.43	186.36	244.68	22	8.88	195.36	0.49	55.75	59.45	30	0.66	288.8	0.4	13.72	17.88		
MAY	88	0.92	803.58	0.43	352.67	467.49	52	8.88	461.76	0.49	238.28	250.50	57	0.66	550.62	0.4	229.25	35.92		
JUN	208	0.92	1778.30	0.43	1138.26	1583.10	110	8.88	976.8	0.49	478.63	498.17	105	0.66	1024.3	0.4	469.72	68.54		
JUL	226	0.92	2108.32	0.43	905.72	1200.60	129	8.88	1145.32	0.49	561.30	584.22	108	0.66	1173.8	0.4	475.97	72.97		
AUG	170	0.92	1584.4	0.43	682.29	903.11	101	8.88	864.88	0.49	438.47	457.45	90	0.66	848.3	0.4	320.0	28.80		
SEP	134	0.92	1248.85	0.43	537.22	713.86	81	8.88	710.28	0.49	352.43	366.81	85	0.66	652.8	0.4	240.9	34.48		
OCT	110	0.92	1025.2	0.43	462.84	584.38	63	8.88	555.64	0.49	274.13	289.31	62	0.66	751.2	0.4	158.67	47.27		
NOV	105	0.92	1037.17	0.43	462.25	678.55	100	8.88	888	0.49	435.12	452.88	52	0.66	692.6	0.4	149.6	44.48		
DEC	177	0.92	1647.08	0.43	708.29	938.85	97	8.88	824.94	0.49	420.88	438.05	76	0.66	732.40	0.4	202.96	49.44		
TOTAL	2121		19765.18		8499.05	11268.15	1161		10807.26		5000.56	5258.70	910		8788.94		2615.64	1273.51		
Total Pounds Paint Used in Index system in 2020 (lb)												38861.28								
Total Gallons Paint Used in Index system in 2020 (gal)												4325								
Average Product Density (lb/gal)												9.27								
Average Solids Content (lb/gal)												5.26	56%							
Average VOC Content (lb/gal)												4.07	44%							

On-Site SPATULAS												Red SPATULAS				Yellow SPATULAS										Dibasic Ether (Tall Solvent) G018		NMP Acrylic Reducing Solvent G06				Acid Catalyst TSA G041158					
2020 Usage (lb/ft)												2020 Usage (lb/ft)				2020 Usage (lb/ft)				2020 Usage (lb/ft)				2020 Usage (lb/ft)		2020 Usage (lb/ft)				2020 Usage (lb/ft)		2020 Usage (lb/ft)					
Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)	Overall	2020 Usage (lb/ft)	2020 Usage (lb/ft)		
JAN	312.10	0.49	2513.947008	0.29	822.67	2051.88	214.64	0.35	1013.030294	0.31	505.52	1329.51	0.10	0.66	339.000358	0.25	58.77	212.10	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
FEB	484.71	0.49	4115.158848	0.29	1181.46	2921.93	421.20	0.35	1769.888847	0.31	1188.61	2901.09	18.00	0.66	182.100863	0.25	65.64	479.14	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
MAR	595.55	0.49	5054.547908	0.29	1459.62	3588.72	495.51	0.35	4470.549421	0.31	1381.88	3394.71	0.00	0.66	0	0.25	0.00	479.14	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
APR	137.70	0.49	1169.030323	0.29	339.02	830.01	109.38	0.35	978.768983	0.31	301.42	675.95	0.00	0.66	0	0.25	0.00	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MAY	274.41	0.49	2339.109333	0.29	678.08	1695.12	212.20	0.35	1078.321765	0.31	644.74	1433.97	24.64	0.66	298.100825	0.25	65.64	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
JUN	621.07	0.49	5277.094229	0.29	1501.62	3747.58	477.91	0.35	4277.260388	0.31	1325.95	2951.31	102.95	0.66	1004.111219	0.25	65.64	7.79	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
JUL	585.95	0.49	5006.020703	0.29	1452.50	3594.53	549.95	0.35	1288.010947	0.31	1454.80	3445.52	71.91	0.66	705.194375	0.25	65.64	7.79	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
AUG	351.00	0.49	2979.59	0.29	864.20	2125.78	270.05	0.35	2416.588822	0.31	749.14	1667.48	90.45	0.66	871.777875	0.25	65.64	5.42	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
SEP	284.89	0.49	2418.887896	0.29	701.28	1712.90	238.89	0.35	2116.588467	0.31	601.95	1475.61	28.35	0.66	273.688838	0.25	65.64	5.42	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
OCT	311.91	0.49	2682.046803	0.29	777.79	1904.25	288.00	0.35	2580.642018	0.31	801.55	1784.09	18.00	0.66	182.100863	0.25	65.64	5.42	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
NOV	280.81	0.49	2384.081215	0.29	651.39	1692.71	217.70	0.35	2446.820249	0.31	749.61	1688.88	0.00	0.66	0	0.25	0.00	5.42	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
DEC	388	0.49	3295.236838	0.29	935.63	2333.61	329	0.35	2961.35	0.31	911.88	2020.67	36	0.66	347.23	0.25	65.64	5.42	0.66	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64	182.100863	0.25	65.64
TOTAL	4618		39048.12		11487.50	28775.61	3244		32898.60		10941.56	24558.43	411		4348.78		1041.70	112.09																			
December usage estimated as the monthly average of January to November, 12 months.																																					
Multiple Acrylic Topcoat Booth Solvent Additions used, so average comparison cannot be calculated to compare to theoretical PPE maximum throughout.																																					
Acrylic Topcoat Booth Solvent Additions All Acrylics Competitions																																					
Total Pounds Paint Used in Acrylic system in 2020 (lb)																																					
Total Gallons Paint Used in Acrylic system in 2020 (gal)																																					
Average Product Density (lb/gal)																																					
Average Solids Content (lb/gal)																																					
Average VOC Content (lb/gal)																																					

Determination of Particle Size Distribution
Source: AP-42 Appendix A.1 and Appendix A.2
From 4.2.2.8 "Automobile and Light-Duty Truck Surface Coating Operations: Automobile Spray Booths (Water-Based Drums)"
Total PM10 after water curtain control: 0.06 kg/No
Total PM10 before water curtain control: 0.4 kg/No
PM10 percentage of Total PM: 28.0%