

# Iowa Department of Natural Resources

## Draft Title V Operating Permit Fact Sheet

This document has been prepared to fulfill the public participation requirements of 40 CFR Part 70 and 567 Iowa Administrative Code (IAC) 24.107(6). 40 CFR Part 70 contains operating permit regulations pursuant to Title V of the Clean Air Act.

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The Iowa Department of Natural Resources (DNR) finds that:

1. Amsted Rail Company, Inc, located at 416 Carbide Lane, Keokuk, IA 5263, has applied to renew their Title V Operating Permit. The designated responsible official of this facility is Corey Jonas.
2. Amsted Rail Company, Inc is a steel foundry. This facility consists of 44 emission units with potential emissions of:

<b>Pollutant</b>	<b>Abbreviation</b>	<b>Potential Emissions (Tons per Year)</b>
Particulate Matter ( $\leq 2.5 \mu\text{m}$ )	PM <sub>2.5</sub>	214.11
Particulate Matter ( $\leq 10 \mu\text{m}$ )	PM <sub>10</sub>	228.40
Particulate Matter	PM	366.78
Sulfur Dioxide	SO <sub>2</sub>	14.04
Nitrogen Oxides	NO <sub>x</sub>	126.45
Volatile Organic Compounds	VOC	42.66
Carbon Monoxide	CO	980.45
Lead	Lead	1.35
Hazardous Air Pollutants <sup>(1)</sup>	HAP	18.37

<sup>(1)</sup> May include the following: Phenol, nickel, manganese, hexane, formaldehyde, cobalt, chromium, cadmium, beryllium, arsenic, mercury, antimony.

3. Amsted Rail Company, Inc submitted a Title V Operating Permit renewal application on March 7, 2024 and any additional information describing the facility on August 21, 2024. Based on the information provided in these documents, DNR has made an initial determination that the facility meets all the applicable criteria for the issuance of an operating permit specified in 567 IAC 24.107.
4. DNR has complied with the procedures set forth in 567 IAC 24.107, including those regarding public notice, opportunity for public hearing, and notification of EPA and surrounding state and local air pollution programs.

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DNR procedures for reaching a final decision on the draft permit:

1. The public comment period for the draft permit will run from October 24, 2024 through November 23, 2024. During the public comment period, anyone may submit written comments on the permit. Mail signed comments to Zane Peters at the DNR address shown below. The beginning date of this public comment period also serves as the beginning of the U.S. Environmental Protection Agency's (EPA) 45-day review period, provided the EPA does not seek a separate review period.
2. Written requests for a public hearing concerning the permit may also be submitted during the comment period. Any hearing request must state the person's interest in the subject matter, and the nature of the issues proposed to be raised at the hearing. DNR will hold a public hearing upon finding, on the basis of requests, a significant degree of relevant public interest in a draft permit. Mail hearing requests to Zane Peters at the DNR address shown below.
3. DNR will keep a record of the issues raised during the public participation process, and will prepare written responses to all comments received. The comments and responses will be compiled into a responsiveness summary document. After the close of the public comment period, DNR will make a final decision on the renewal application. The responsiveness summary and the final permit will be available to the public upon request.

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DNR concludes that:

1. DNR has authority under 455B.133 Code of Iowa to promulgate rules contained in 567 IAC Chapters 21-33, including, but not limited to, rules containing emission limits, providing for compliance schedules, compliance determination methods and issuance of permits.
2. DNR has the authority to issue operating permits for air contaminant sources and to include conditions in such permits under 455B.134 Code of Iowa.
3. The emission limits included in this permit are authorized by 455B.133 Code of Iowa and 567 IAC Chapters 21-33.
4. DNR is required to comply with 567 IAC Chapter 24 in conjunction with issuing a Title V Operating Permit.
5. The issuance of this permit does not preclude the DNR from pursuing enforcement action for any violation.

Facility Name: Amsted Rail Company Inc.  
Facility Number: 56-01-023  
EIQ: 92-2304  
Permit Number: 02-TV-014R4  
Reviewer: Zane Peters  
Date: 08/07/24

Amsted Industries was founded in 1902 as American Steel Foundries when eight steel foundries in the East and Midwest US combined. The company changed its name to Amsted Industries in 1962. Amsted was a combination of American Steel and TED (the company's majority Transportation Equipment Division). This division builds components for locomotives (e.g., axles, coil springs, wheels, etc.), freight cars (e.g., axles, brakes, bearings, wheels, etc.), and bogie assembly systems & components. In addition, it provides an integrated railcar fleet management platform that can provide analytical insights to effectively track, monitor, and manage unpowered freight rail assets in real time. This specific facility was founded in 1977 under the name of Griffin Wheel Company, Inc., which became part of Amsted Rail in October 2008.

The fourth Renewal Title V application was received 03/07/2024. Facility is subject to Title V as it is a Major stationary source for PM<sub>10</sub>, PM<sub>2.5</sub>, Nitrogen Oxides and Carbon Monoxide (PTE 100 tpy or more of any air pollutant). This facility is steel foundry facility and has 22 emission points.

**Applicability Requirements:**

40 CFR 60 Subpart JJJJ – New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines

40 CFR 63 Subpart ZZZZZ – National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Source

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The operations at this facility are not subject to the requirements of 40 CFR, Part 63, Subpart EEEEE, "National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries". The facility has construction permits that limit the potential to emit of a single hazardous air pollutant from the facility to 9.4 tons per year and that limit the potential to emit of total hazardous air pollutants from the facility to 24.4 tons per year. Therefore, in accordance with section 63.7681, the facility is not a major source of HAP emissions, and the requirements of Subpart EEEEE do not apply.

## **Changes Since the Last Issuance**

### **General Changes**

- Permit number and relevant dates updated
- Permit Contact updated (pp. 1)
- Supervisor of Air Operating Permits Section updated (pp. 1)
- Plantwide EO10 paragraph added (pp. 6)
- General Conditions updated to include the recent EO10 changes (pp. 79-94)

### **Emission Point Specific Changes**

- EP-41 – Emission point removed from the permit in accordance with a rescission letter submitted by the facility
- EP-42 – Emission Point added to the permit in accordance with DNR Construction Permit 22-A-432 (pp. 73-75)
- EP-44 – Emission Point added to the permit in accordance with DNR Construction Permit 24-A-121 (pp. 76-78)

### **Periodic Monitoring**

Periodic Monitoring requirements are in accordance with the Department's Periodic Monitoring Guidance Document. The DNR included CAM plans and Facility/Agency O&M in the permit where applicable. These determinations were based on the DNR's *Periodic Monitoring Guidance*.

EP-3 consists of 3 electric arc furnaces with a baghouse (CE-1) to control emissions. According to the calculations submitted with the application package, this emission point does not qualify for CAM for this renewal.

EP-6 consists of 3 hubcutters (EU-8A & EU-8B) with a spark arrestor (CE-3) and a baghouse (CE-4) to control emissions. According to the calculations submitted with the application package, EU-8B/CE-4 qualifies for a CAM plan. Details can be found in the permit.

EP-7 consists of grinding operations with a baghouse (CE-5) to control emissions. According to the calculations submitted with the application package, EP-7 qualifies for a CAM plan. Details can be found in the permit.

EP-8 consists of wheel cleaning and peening with a baghouse (CE-6) to control emissions. According to the calculations submitted with the application package, EP-8 qualifies for a CAM plan. Details can be found in the permit.

EP-9 consists of a cope leaner with a cyclone (CE-7) and a baghouse (CE-8) to control emissions. According to the calculations submitted with the application package, EP-9 qualifies for a CAM plan. Details can be found in the permit.

EP-10 consists of coating operations with a baghouse (CE-21) to control emissions. Due to the Department's policy towards coating operations, a Facility O&M plan will be required and

carried forward from the previous permit.

EP-11 consists of a drag cleaner with a cyclone (CE-10) and a baghouse (CE-11) to control emissions. Due to the Department's policy towards potential fugitive dust, a Facility O&M plan will be required and carried forward from the previous permit.

EP-15 consists of sand transfer operations with a cyclone (CE-14) and a baghouse (CE-15) to control emissions. Due to the Department's policy towards potential fugitive dust, a Facility O&M plan will be required for CE-15 and carried forward from the previous permit.

EP-18 consists of graphite gold machining with a baghouse (CE-17) to control emissions. According to the calculations submitted with the application package, EP-18 qualifies for a CAM plan. Details can be found in the permit.

EP-20 consists of grinding operations with a baghouse (CE-19) to control emissions. According to the calculations submitted with the application package, EP-20 qualifies for a CAM plan. Details can be found in the permit.

EP-19 consists of a lathe with cartridge filters (CE-39) to control emissions. Due to the Department's policy towards potential fugitive dust, a Facility O&M plan will be required and carried forward from the previous permit.

### **Stack Testing**

#### **EP-3**

<b>Pollutant</b>	<b>Testing Required</b>	<b>Test Run Time</b>	<b>Test Method</b>
PM (state)	Yes	2 hour	40 CFR 60, Appendix A, Method 5 and 40 CFR 51 Appendix M, Method 202
Opacity	Yes	1 hour	40 CFR 60, Appendix A, Method 9
HAP metals	Yes*	2 hour	40 CFR 60, Appendix A, method 29

\* The permittee shall submit a report to the DNR - Air Quality Bureau if the results of the metals testing is significantly different than what was reported in the construction permit application for Project Number 04-433.

The stack tests listed above are required on the baghouse every 2.5 years unless the results of the testing show that the emissions are less than 70% of the allowable emission rates.<sup>(1)</sup> If the results of the testing show that emissions are less than 70% of the allowable emission rates, the permittee may perform the required tests once every five years. At the same time that the baghouse's exhaust stack is tested, the permittee shall perform an analysis on the baghouse dust for the concentration of HAP metals. The unit(s) being sampled should be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In

cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the department to determine whether this unit(s) is in compliance.

Each emissions compliance test must be approved by the DNR. Unless otherwise specified by the DNR, each test shall consist of three separate runs. The arithmetic mean of three acceptable test runs shall apply for compliance, unless otherwise indicated by the DNR. The test methods and run times to be used are those stated above unless otherwise approved by the DNR.

A pretest meeting shall be held at a mutually agreeable site no less than fifteen (15) days prior to the date of each test. Representatives from the DNR shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. The owner shall be responsible for the installation and maintenance of test ports. The DNR shall reserve the right to impose additional, different, or more detailed testing requirements.

*The owner of this equipment or the owner's authorized agent shall provide written notice to the Director, not less than 30 days before a required stack test or performance evaluation of a continuous emission monitor. Results of the test shall be submitted in writing to the Director in the form of a comprehensive report within 6 weeks of the completion of the testing. 567 IAC 25.1(7)*

Authority for Requirement: DNR Construction Permit 76-A-107-S2

#### EP-42

Pollutant - Opacity

Stack Test to be Completed by (date) – Every 6 months <sup>(1)</sup>

Test Method - 40 CFR 60, Appendix A, Method 9

Authority for Requirement - DNR Construction Permit 22-A-432

<sup>(1)</sup> The last opacity test to demonstrate compliance was conducted on March 20, 2024. The test was conducted on the Melt Shop Roof exhaust (EP 1; permit number 05-A-218).

#### Other Notes

The facility had requested federally enforceable limits on the sand mixer (EU 27) in order to limit the emissions of phenol, a HAP. The original permit with federally enforceable limit has since been rescinded (05-A-217). The department utilizes our authority, 567 IAC 22.108(3), to assure adequate recordkeeping for phenol.

With these restrictions, the potential to emit of HAPs from the facility is determined to be:

#### **Electric Arc Furnace (EU-3A):**

Lead: 0.0189 lb/hr or 0.083 tpy, based on an expected concentration of 0.1179% of the allowable PM emission rate of 16.1 lbs/hr.

Antimony: 0.00056 lb/hr or 0.0025 tpy, based on an expected concentration of 0.0035%

of the allowable PM emission rate of 16.1 lbs/hr.

Cadmium: 0.0032 lb/hr or 0.014 tpy, based on an expected concentration of 0.02% of the allowable PM emission rate of 16.1 lbs/hr.

Chromium: 0.047 lb/hr or 0.205 tpy, based on an expected concentration of 0.29% of the allowable PM emission rate of 16.1 lbs/hr.

Cobalt: 0.0015 lb/hr or 0.0066 tpy, based on an expected concentration of 0.0094% of the allowable PM emission rate of 16.1 lbs/hr.

Manganese: 0.434 lb/hr or 1.9 tpy, based on an expected concentration of 2.7% of the allowable PM emission rate of 16.1 lbs/hr.

Mercury: 0.0225 lb/hr or 0.0987 tpy, based on an expected concentration of 0.14% of the allowable PM emission rate of 16.1 lbs/hr.

Nickel: 0.114 lb/hr or 0.50 tpy, based on an expected concentration of 0.71% of the allowable PM emission rate of 16.1 lbs/hr.

The expected total HAP metal emission rate is 2.81 tons per year, based on 8760 hours/year of operation, a PM emission limit of 0.01 gr/dscf on the baghouse, and the expected concentration of HAP metals.

The US EPA stated in the preamble to the proposed steel foundry MACT rule (December 23, 2002 Federal Register, p. 78290) that electric arc furnaces are not anticipated to be a significant organic HAP emissions source and organic HAP emissions can be considered negligible provided that the charge scrap does not contain organic impurities.

#### **Melt Shop Fugitive: Roof exhausts (EU 3B)**

The melt shop emissions that are not captured by the EAF baghouse exhaust to the atmosphere through 13 roof exhausts with powered ventilation fans and one roof monitor. A particulate emission limit has been established for this entire group of emission points at 24.9 pounds per hour. The PM emissions from the melt shop roof contain HAP metals. Emissions of these HAP metals have been determined by multiplying the PM emission limit from the melt shop roof by the percentage of metals that are found in an analysis of the EAF baghouse dust.

Lead: 0.56 tpy, based on an expected concentration of 0.514% of the allowable PM emission rate of 24.9 lbs/hr.

Antimony: 1.37E-5 lb/hr or 0.0001 tpy, based on an expected concentration of 0.000055% of the allowable PM emission rate of 24.9 lbs/hr.

Cadmium: 0.00946 lb/hr or 0.0414 tpy, based on an expected concentration of 0.038% of the allowable PM emission rate of 24.9 lbs/hr.

Chromium: 0.00996 lb/hr or 0.044 tpy, based on an expected concentration of 0.04% of the allowable PM emission rate of 24.9 lbs/hr.

Cobalt: 0.00029 lb/hr or 0.0013 tpy, based on an expected concentration of 0.0012% of the allowable PM emission rate of 24.9 lbs/hr.

Manganese: 0.946 lb/hr or 4.14 tpy, based on an expected concentration of 3.8% of the allowable PM emission rate of 24.9 lbs/hr.

Nickel: 0.00249 lb/hr or 0.011 tpy, based on an expected concentration of 0.01% of the allowable PM emission rate of 24.9 lbs/hr.

The expected total HAP metal emission rate is 5.51 tons per year, based on 8760 hours/year

of operation, 95% average capture efficiency of the EAF baghouse and the expected concentration of HAP metals.

### **HAP emissions from combustion equipment**

The potential to emit for hexane, HAP, was estimated from all natural gas or propane fired equipment at the facility. The potential to emit was based on AP-42 emission factors, maximum fuel usage rate and 8760 hours of operation per year.

Ladle preheater (EU 4): 0.07 ton/yr

hexane Tube preheaters (EU 5): 0.02

ton/yr hexane Normalizing furnace (EU  
9): 0.31 ton/yr hexane

Tempering furnace (EU 10): 0.031 ton/yr

hexane Mold holding furnace (EU 21): 0.04

ton/yr hexane Sand heater (EU 26B): 0.018

ton/yr hexane

Total potential hexane emissions: 0.49 tpy

The emissions of other HAPs from combustion are not significant.



### **HAP emissions from Core baking (EU 18)**

Potential formaldehyde and phenol emissions are estimated from the core baking ovens in the following way. The maximum amount of sand that can be processed in the core baking station is 1.75 tons per hour. The resin supplier (Borden) has determined that 0.22 lb of phenol is emitted per ton of sand baked and that 0.002 lb of formaldehyde is emitted per ton of sand produced. Therefore the potential to emit from this unit is: 1.69 tpy phenol, 0.015 tpy formaldehyde and 1.71 tpy total HAPs.

### **HAP emissions from the sand mixer (EU 27)**

Potential phenol emissions from the sand mixer are 7.71 tons per year (1.76 lb/hr). This is based on construction permit 76-A-110-S2.

### **Potential to emit of HAPS from the facility**

The potential to emit of phenol from the facility is 9.4 tpy. Phenol has the highest potential to emit of any single HAP.

Total Hazardous Air Pollutants Metals (Total HAP Metals) Emission Limit: 6.21 Tons per Year

Limit established to keep the facility an area source of HAP emissions. This limit is for Melt Shop Roof: scrap handling (EU 1), uncaptured emissions from three electric arc furnaces (EU 3B), ladle preheater (EU 4)] for total HAP emissions of metals.

Total Hazardous Air Pollutants Metals (Total HAP Metals) Emission Limit: 3.1 Tons per Year

Limit established to keep the facility an area source of HAP emissions. This limit is for three electric arc furnaces (EU 3A) for total HAP emissions of metals.

Where necessary, emissions calculations are explained in the emissions calculation spreadsheets. Emissions limits are also shown in comments, where necessary. All emission limits and operational limits and requirements from this facility's construction permits were included in the Title V permit.

Some of these notes are carried over or modified from the previous permit writers. For Potential Emissions, AP-42, WebFIRE when available, or construction permit limits were used. For some particulate emissions, the PM<sub>10</sub> emission factor was doubled to estimate PM emissions (or vice versa), when only one factor was available. For combustion, sand, and surface coating equipment, PM and PM<sub>10</sub> emissions are assumed to be equivalent.

The facility has conservatively used equal emission factors for PM and PM-10 for some sand operations and grinding. Generally, this is because of the control values, which results in a higher emission from PM-10, verses PM.

### **Stack Testing Notes for EP-4**

40 CFR Part 63 Subpart ZZZZZ requires Amsted Rail to perform opacity testing of fugitive

emissions per the Table 1. of the Subpart. Fugitive emissions are to be assessed from buildings or structures housing any iron and steel foundry emissions sources subject to the opacity limit identified in 63.10895(e). During the semiannual opacity test certified observer may identify a limited number of openings or vents that appear to have the highest opacities and perform opacity observations on the identified openings or vents in lieu of performing observations for each opening or vent from the building or structure. Alternatively, a single opacity observation for the entire building or structure may be performed, if the fugitive release points afford such an observation. The current Title V Operating Permit identifies the 63.10895(e) requirement under EP-1 and EP-5 as well.

During the semiannual opacity testing, Amsted does not normally see opacity, but believe the best opportunity for any observation to be at the Fugitive Roof Vents, EP-1 and have reported as such to fulfill our Subpart ZZZZZ, existing Title V and DNR Construction Permit 22-A-432 requirements.