



United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

**Air Branch Inspection Report
Unannounced Partial Compliance Evaluation**

Keokuk Mills, LLC
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Keokuk, IA, 52632
FRS# 110013331974

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Inspection Date(s):
December 7, 2023

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- A Record Request (1 page)
- B Field Photographs (18 pages)
- C Written Material Specification (7 pages)
- D Notification of Compliance (1 page)
- E SDS for Binders (3 documents)
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INSPECTION OVERVIEW

INSPECTION OBJECTIVE

The objective of the partial compliance evaluation (PCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements located in the code of federal regulations at 40 CFR Part 63 Subpart ZZZZZ—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources.

This inspection was conducted by Luke Rodriguez, EPA Region 7, Enforcement and Compliance Assurance Division, Air Branch.

FACILITY CONTACT INFORMATION

Table 1 lists the primary facility contacts.

Table 1. FACILITY CONTACT INFORMATION		
Name, Title	Phone No.	Email Address
Shawn Ferdig, Quality Manager	(319) 520-1385	sferdig@keokuksteel.com
Alan See, Casting Engineer	(319) 313-8695	asee@keokuksteel.com
Andrew Spray, Health Safety and Environmental Manager	(319) 313-8695	aspray@keokuksteel.com

FACILITY OVERVIEW

Keokuk Mills, LLC was issued a Construction Permit (21-018) on October 6, 2022, to reclassify the facility from a Major source to an Area source of Hazardous Air Pollutants (HAP). The permit imposed operating restrictions on the HAP content of the binders, catalysts and resins as well as setting a maximum allowable metal pour amount. Together, these limitations reduced the potential for HAP emissions to less than 10 tons for any single HAP and less than 25 tons per year for all HAPs. This change from a Major to an Area source of HAP emissions also changed the National Emission Standards for Hazardous Air Pollutants (NESHAP) applicability from Part 63 Subpart EEEEE, National Emission Standards for Hazards Air Pollutants for Iron and Steel Foundries (applicable to Major Source) to Part 63 Subpart ZZZZZ (the NESHAP applicable to Area Source Iron and Steel Foundries). The change in applicability was effective on October 6, 2022.

Based on the information submitted as part of the permit application for Permit 021-018, the Iowa Department of Natural Resources (IDNR) found that three pieces of equipment had been installed without first amending the affected permit or without obtaining a construction permit. As a result, the Department issued a Notice of Violation (NOV) on July 27, 2022, because Emission Units 37S5 and 37N6 had been constructed in 2017 without first amending Permit No.

04-A-1101-S2 and (EP-37i) had been re-installed in 2021 without obtaining a construction permit. There have been no site visits from either IDNR or US EPA within the last 5 years.

Table 2. APPLICABLE REGULATIONS AND STANDARDS	
Code of Federal Regulation	Standard Name
40 CFR Part 63	Subpart A—General Provisions Subpart ZZZZZ—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources

FACILITY OPERATIONS SUMMARY

Keokuk Mills, LLC dba Keokuk Steel Castings is a steel foundry, located in Keokuk, Iowa. This foundry makes steel and alloy castings using binders and sand. After the issuance of Permit 21-018, Particulate Matter (PM) and Volatile Organic Compounds potential emissions were determined to be 133.95 tons/year and 344.82 tons/year, respectively. The facility is also classified as a “major stationary source” for purposes of the Title V program because VOC potential emissions (344.82 tons/year) are above the Title V major source threshold of 100 tons/year for this pollutant. Permit No. 21-018 limited Single Metal HAP potential emissions to 1.21 tons/year; Single Organic HAP potential emissions are 7.35 tons/year; and Total (Metal & Organic) HAP potential emissions to 24.07 tons/year.

The facility is subject to 40 CFR 63 Subpart ZZZZZ because it is an iron and steel foundry that is also an Area Source of HAP. The facility is considered a small foundry because the annual melting capacity is less than 10,000 tons per year.

Secondary metal production is processing of metal-containing materials to recover and reuse the metal. This facility receives both alloys and scrap metal which is pretreated, melted and then cast into final products inside sand molds. Keokuk Mills operates one induction furnace, which according to Permit 21-018, has a maximum capacity of 2.2 tons of steel per hour. Prior to 2016, there was an arc furnace rated at a maximum capacity of 9 tons per hour. According to Mr. Ferdig, that unit is not in a position to be used without a significant investment in time and resources.

FIELD ACTIVITIES SUMMARY

I arrived at the facility on December 7, 2023, at 8:30 a.m. and completed a drive by surveillance inspection. I did not observe visible emissions. I made entry at the front door at 9:00 a.m. and introduced myself and presented my credentials and provided my business card to Mr. Ferdig. I conducted an opening conference during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA, specifically, to determine

compliance with the conditions listed in Table 2. I explained that after asking for some general business information, I would observe work practices, process units, emission units, control equipment and review associated records demonstrating compliance with the standard, permit, regulation. I explained to Mr. Ferdig that the facility could make a claim of business confidentiality. Mr. Ferdig did not make a claim of confidentiality at that time but deferred the decision until he was preparing to submit the requested records electronically. He did not make a claim of confidentiality at that time the records were submitted electronically.

I was given a facility tour by Mr. Ferdig, Mr. Spray and Mr. See. I reviewed the condition of emission units, the operating status of the equipment, and any required record keeping for the equipment for compliance with the regulations and permit conditions noted in Table 2 only. I provided the facility contacts with a list of records which I would like to review as part of the inspection and sent an email which identified the time frame and the citation of the requirement. This email is included as **Appendix A**. All records were provided by the facility via a shared folder on December 15, 2023, as I requested. I conducted a closing conference with Mr. Ferdig, Mr. Spray and Mr. See. I did not provide the facility with a Notice of Potential Findings as I had not yet reviewed the requested records.

Observations and potential findings from the facility tour, and records review, and sampling/measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions and activities were documented in field records. All photographs are attached as **Appendix B**. I made the following observations during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information. I reviewed the compliance of the facility with the requirements of 40 CFR 63 Subpart ZZZZZ and those permit conditions which limit the potential emissions of HAP to area source levels as these determine which NESHAP applies to the facility.

40 CFR 63 Subpart ZZZZZ

§ 63.10885 What are my management practices for metallic scrap and mercury switches?

§ 63.10885(a) Metallic scrap management program.

Keokuk Mills elects to comply with (a)(1). According to Mr. Ferdig, the facility does not accept post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, chlorinated plastics, or free liquids. The facility maintains a written material specification, included as **Appendix C**. An inspection of each scrap delivery is conducted by the Melt Supervisor to ensure that there are no prohibited materials. Scrap is chemically analyzed both before and after burning to ensure that it meets both the material specifications and the product specifications.

§ 63.10885(b) specifies requirements for mercury from scrap containing motor vehicle scrap. As noted above, Mr. Ferdig said that the facility does not accept motor vehicle scrap.

§ 63.10885(b)(4) requires that the owner or operator must certify in the notification of compliance (NOC) status and maintain records of documentation that this scrap does not contain motor vehicle scrap. The Notification of Compliance Status was submitted on December 13, 2023 (**Appendix D**). This NOC did not have the certifications required by 63.10890(c) for this type of facility. The NOC was required within 30 days after the applicable compliance date specified in § 63.10881 as required by § 63.10890(c). Section 63.10881(c) indicates that an affected source for which the initial startup date is after January 2, 2008, must achieve compliance with the provisions of this subpart upon startup. Startup for this facility is the date of the facility's reclassification as an area source on the issuance of Permit (21-018) on October 6, 2022. The notification of compliance was due on November 6, 2022.

§ 63.10886 What are my management practices for binder formulations?

Each furfuryl alcohol warm box mold or core making line at a new or existing iron and steel foundry must use a binder chemical formulation that does not use methanol as a specific ingredient of the catalyst formulation. This requirement does not apply to the resin portion of the binder system. SDSs for the binders and catalysts are included as **Appendix E**. The SDS documents provided by the facility do not list methanol as a specific ingredient.

§ 63.10890 What are my management practices and compliance requirements?

- (c) The NOC which was submitted in December 2023 is attached as **Appendix D**. This NOC did not have the certifications required by 63.10890(c) for this type of facility.
- (f) The facility has not previously submitted any Semiannual compliance reports through CDX as required by § 63.10890(f). See correspondence with Mr. Ferdig in **Appendix F**.

Permit Requirements for the equipment located in Construction Permit (21-018), General Requirements (e) and (f).

I also reviewed the compliance status for those requirements which specifically limit the facility to be an area source of HAP because compliance with those requirements is relevant to whether the facility remains subject to the Area Source NESHAP and not the Major Source NESHAP.

“e. The owner or operator shall limit the amount of binder chemicals (resin and catalyst) used in the mold making operation to no more than 950,000 pounds per rolling 12-month period.”

Keokuk Mills provided a spreadsheet which the facility uses to track the amount of binder chemicals used. I reviewed the records for the 12-month periods ending in December of 2021 through the period ending in November of 2023. The records provided indicated that the facility had not used more than 950,000 lbs during any of these 12-month periods.

“f. The owner or operator shall limit the amount of mold wash materials to no more than 100,000 pounds per rolling 12-month period.”

I reviewed the records for the 12-month periods ending in December of 2021 through the period ending in November of 2023. The records provided indicated that the facility had not used more than 100,000 lbs during any of these 12-month periods.

Potential Finding 1: The Notification of Compliance Status was submitted late and incomplete.
Observation Summary: The NOC which was submitted in December 2023 is attached as Appendix D. This NOC did not have the certifications required by 63.10890(c) for this type of facility.
Citation: 63.10890(c)
Evidence: Appendix D to the Inspection Report.
Description of Observation: I requested a copy of the NOC during the inspection. The facility determined that they had not submitted an NOC and submitted one in December of 2023. The NOC was initially due on November 6, 2022. This NOC did not contain required certifications under 63.10890(c)(1), (2) and (3). An updated NOC had not been submitted at the time of this report.

Potential Finding 2: Semiannual compliance reports have not been submitted through the Central Data Exchange (CDX) to the Compliance and Emissions Data Reporting Interface (CEDRI).
Observation Summary: The facility has submitted semiannual compliance reports to the Iowa Department of Natural Resources and to EPA Region 7 by mail but not submitted them through CDX.
Citation: 63.10890(f), 63.10899(c)
Evidence: EPA Central Data Exchange Files
Description of Observation: In an email on January 2, 2024, I asked Mr. Ferdig whether the facility had submitted any of it's semiannual reports through CDX and he informed me via email on January 5, 2024 that they were not aware of that requirement and had not been submitting the reports via CDX. Per § 63.10899(c), semiannual compliance reports were to be submitted to the Administrator via the C which can be accessed through the CDX.

End of report.