Emissions Minimization Plan

Regulation 12, Miscellaneous Standards of Performance, Rule 13 Foundry and Forging Operations

United States Pipe & Foundry Company, LLC
District Site # A0083
1295 Whipple Road
Union City, CA 94587

PUBLIC COPY
December 17, 2015

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I, as the Responsible Manager of this facility, hereby certify that as of this date, this Emissions Minimization Plan contains all elements and information required of a complete EMP pursuant to District Regulation Section 12-13-403 and that the information contained in this EMP is accurate.

Certified by: D A. Hiestand *Dated:* 12/17/2015

David A. Hiestand
Plant Manager

Responsible Manager

Designation of Confidential Business Information

Describe the information you designate as "CONFIDENTIAL" that are trade secret or otherwise exempt under law from public disclosure. Specify what is "CONFIDENTIAL" and include specific section(s) and corresponding page number(s).

Name of Section / Page Number(s)	Description of Confidential Information

Company Description

United States Pipe and Foundry Company, LLC (US Pipe) owns and operates an iron foundry in Union City, California (UC) for the production of ductile iron pipe. Iron scrap is melted in a cupola furnace and the molten metal is cast into pipe using reusable molds.

US Pipe is classified as a Large Foundry and is subject to air emission regulations described in the Code of Federal Regulations, Title 40 of the Code of Federal Regulations, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries Area Sources, Part 63, Subpart ZZZZZ.

The facility is also subject to the newly promulgated Bay Area Air Quality Management District (BAAQMD) Regulation 12-13: Miscellaneous Standards of Performance for Foundry and Forging Operations. The purpose of this Rule is to require the development of and compliance with Emissions Minimization Plans designed to minimize the fugitive emissions of particulate matter and odorous substances from foundries and forges operating within the District.

As part of Regulation 12-13 requirements, the facility reported to the BAAQMD the list of the operations, processes, and equipment used for its Metal Melting, Tapping and Mold and Core Making Operations which are subject to 40 CFR Part 63, Subpart ZZZZZ: NESHAP for Iron and Steel Foundries Area Sources, Section 63.10895(b). In addition, this facility submitted to the BAAQMD a copy of its written Operation and Maintenance Plan that was required by the US EPA Administrator pursuant to 40 CFR Part 63, Subpart ZZZZZ: NESHAP for Iron and Steel, Section 63.10896.

This Emission Minimization Plan (EMP) is developed pursuant to Regulation 12-13. This EMP details the management practices, measures, equipment and procedures that are employed or are scheduled to be implemented to minimize fugitive emissions of particulate matter and of odorous substances, as prescribed in the regulations, particularly in Sections 12-13-402 and 403.

As stipulated in the regulation, this EMP has to be reviewed by the BAAQMD Air Pollution Control Officer (APCO) for completeness. Once deemed complete, the APCO shall make the complete Plan available for public comment. Thus, this EMP must also be revised accordingly based on comments received from the public and APCO's recommendations, if any, for additional processes and procedures to further reduce or prevent fugitive emissions from the foundry based on technical and economic feasibility, and made in consideration of worker health and safety.

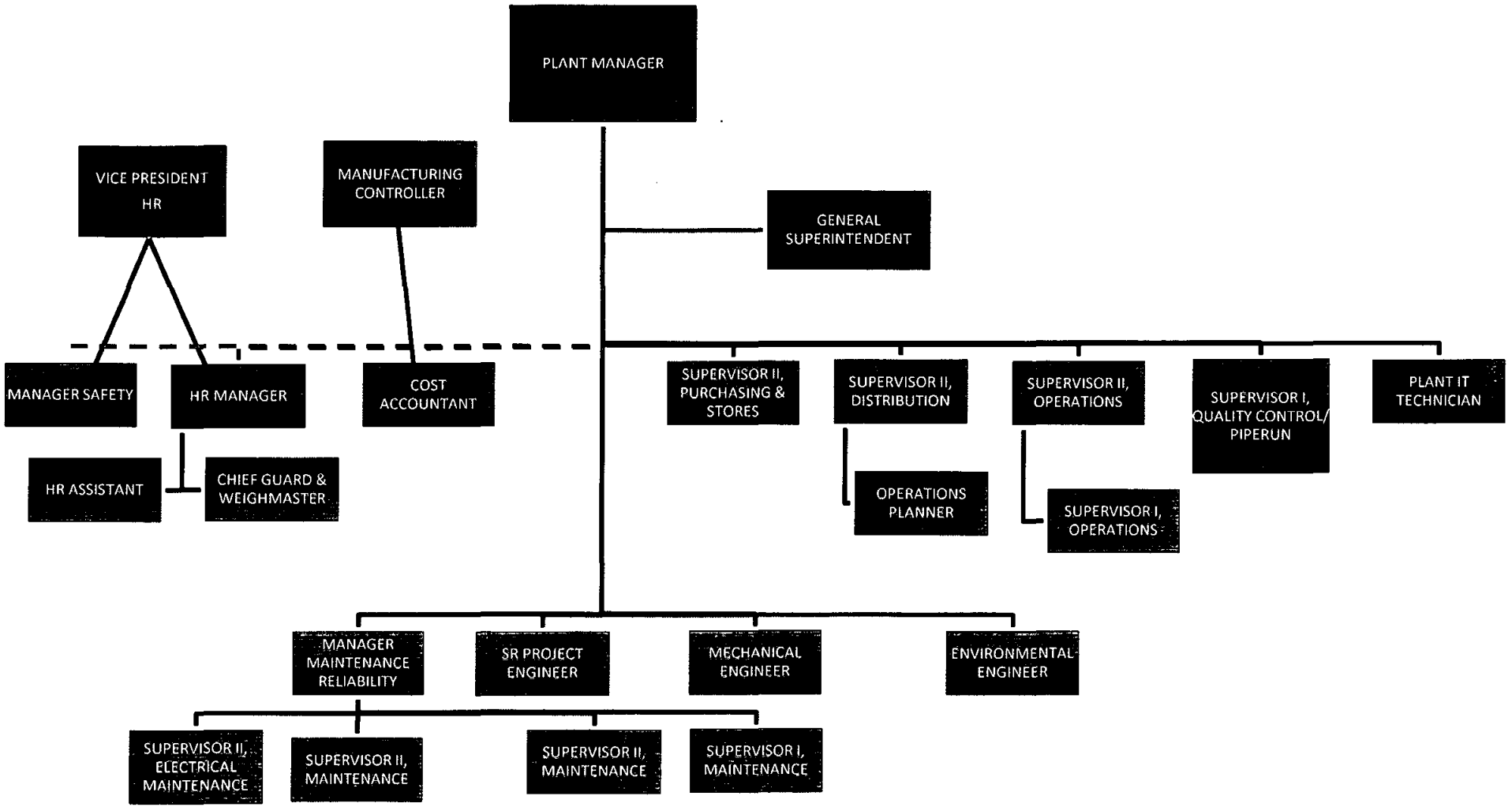
Company Organizational Chart and Schedule of Management Operators
12-13-403.1.3

A. *Company Organizational Chart-* Attach a copy of the organizational chart of the company, which describes the business structure and includes the name of the facility's Responsible Official.

B. *Schedule of Management Operators* - Provide the names and contact information of the Onsite Responsible Manager(s) and Onsite Alternate Contact(s) and their duty schedule.

A. COMPANY ORGANIZATIONAL CHART

UNITED STATES PIPE & FOUNDRY COIMPANY, LLC



B. Schedule of Management Operators

Onsite Responsible Manager(s)

Name:
Title: Plant Manager
Phone: 510-441-5810
Email:
Schedule/Shift:

Name:
Title: Plant Superintendent
Phone: 510-441-5810
Email:
Schedule/Shift:

Onsite Alternate Contact(s)

Name:
Title: Plant Superintendent
Phone: 510-441-5810
Email:
Schedule/Shift:

Name:
Title: Supervisor II, Operrations (Melting)
Phone: 510-441-5810
Email:
Schedule/Shift:

Name:
Title: Environmental Engineer
Phone: 510-441-5810
Email:
Schedule/Shift:

Contents of the EMP

12-13-403

The owner of operator of the foundry or forge subject to Section 12-13-401 shall prepare a complete and accurate EMP that details the management practices, measures, equipment and procedures that are employed or scheduled to be implemented to minimize fugitive emissions of particulate matter and odorous substances for the operations subject to the EMP.

A. *Operations Subject to EMP and Schedule of Operations*

B. *Description of Operations* - Facilities with operations under 12-13-402 must list and provide description of all process equipment, material usages, abatement and control equipment and monitoring parameters to reduce fugitive emissions of particulates and odors. Please provide information for all the following operations that apply.

C. *Management Practices to Reduce Fugitive Emissions*- Facilities with operations under 12-13-402 must list and provide descriptions of all preventative maintenance activities, pollution prevention and source reduction measures to reduce fugitive emissions of particulates and odors. Provide schedules of activities conducted.

D. *Description of Abatement and Control Equipment*- Facilities must provide a comprehensive list of all abatement and control equipment for operations subject to 12-13-402 and name the source(s) of operation in which it abates.

A. Operations Subject to EMP and Schedule of Operations

The EMP shall address all of the following operations that are conducted at a foundry or forge per 12-13-402.

Please check all facility operations that apply and provide the schedule of operation.

Operation		Schedule of Operations
☒ 402.1	Mold and Core Making Operations	
☒ 402.2	Metal Management	
☒ 402.3	Furnace Operations, including tapping and pouring	
☐ 402.4	Forging Operations	
☒ 402.5	Casting and Cooling Operation	
☐ 402.6	Shake Out Operations	
☒ 402.7	Finishing Operations	
☐ 402.8	Sand Reclamation	
☒ 402.9	Dross and Slag Management	

402.1 Mold and Core Making Operations

B. Description of Operations - MOLD AND

Section #	Equipment Name and Manufacturer /Model #	District S# and Applicable NESHAPs Section	NAM: Binders	Abatement Monitored	Monitoring Parameters
1	RJ Machinery Co. Inc Model#2436	FS-53 (Exempt) N/A		☐ Yes ☒ No	
2	RJ Machinery Co. Inc Model#2436	FS-54 (Exempt) N/A		☐ Yes ☒ No	
3	RJ Machinery Co. Inc Model#1826	FS-55 (Exempt) N/A		☐ Yes ☒ No	
4	RJ Machinery Co. Inc Model#1220	FS-56 (Exempt) N/A		☐ Yes ☒ No	
5	RJ Machinery Co. Inc Model#1220	FS-57 (Exempt) N/A		☐ Yes ☒ No	
6	RJ Machinery Co. Inc Model#1220	FS-81 (Exempt) N/A		☐ Yes ☒ No	
7	Core Coating Model# Unknown	FS-58 (Exempt) N/A	None	☐ Yes ☒ No	

B. Description of Operations – MOLD AND CORE MAKING OPERATIONS

Provide information on binders used in mold and core making operations.

Section #	Name of Binder	Binder Mix Ratio	Name of Source(s) and/or District S# Where Binder Is Used	Product Specification per MSDS
1	Resin Coated Sand		FS-53 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
2	Resin Coated Sand		FS-54 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
3	Resin Coated Sand		FS-55 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
4	Resin Coated Sand		FS-56 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
5	Resin Coated Sand		FS-57 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
6	Resin Coated Sand		FS-81 (Exempt)	VOC CONTENT (%): 0.002% PHENOL CONTENT (%): 0.006%
				VOC CONTENT (%): PHENOL CONTENT (%):
				VOC CONTENT (%): PHENOL CONTENT (%):

C. Management Practices to Reduce Fugitive Emissions – MOLD AND CORE MAKING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for core and mold making operations.

Section #	Name of Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	None		
2	None		
3	None		
4	None		
5	None		
6	None		
7	None		

C. Management Practices to Reduce Fugitive Emissions – MOLD AND CORE MAKING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Sweeping of ground	To cleanup dirt and spillages	Daily; once a day at end of production

402.2 Metal Management

B. Description of Operations - Metal Management

Section #	Name of Non-Exempt Metal or Metal Alloy Used for Production	Metal Type	Method of Verification for Determining Chemical Composition
1	Scrap metals: Cut plate & structural steel; Foundry steel Busheling steel; Motor blocks less transmissions; Shredded auto bodies (frag).	☒ Ferrous ☐ Non-Ferrous	Once scrap metals have been melted and become a molten iron, cup samples are taken and analyzed for the metal chemistry in an Spectro machine.
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	

B. Description of Operations - Metal Management

Describe the facility's metal inspection program, work practice standards and material acquisition plan/procedures upon receipt of scrap or unprocessed metal. Include any pollution prevention management practices and source reduction measures to ensure the metal received is clean.

US Pipe Union City Pipe Plant has a metallic scrap broker (MS Services, Ltd (MSS) chosen as the exclusive agent for procuring scrap at U.S. Pipe's Union City plant. A Materials Acquisition Program has been developed that requires scrap to be free, to the extent practicable, of organics (such as plastics and petroleum-based oils) and HAP metals (such as mercury and lead).

For organics, the scrap supplier shall, to the extent practicable, remove plastics and ensure scrap materials are drained free of liquids. For HAP metals, the scrap supplier shall, to the extent practicable, remove accessible mercury switches from trunks and hoods of automotive bodies and also, to the extent practicable, remove lead components such as batteries and lead wheel weights.

Facility has no scrap certification program but has a scrap inspection and scrap materials acquisition program. U.S. Pipe representatives responsible for the handling and processing of scrap materials and familiar with scrap quality (melting supervisors, crane operators, crane followers, etc.) shall do a visual inspection on each shipment of scrap materials that arrives at U.S. Pipe plant in Union City. The U.S. Pipe inspectors shall use the Scrap Receiving Form in conducting their visual inspections prior to receiving the scrap delivery (see Appendix 1).

In addition, the scrap broke (MSS) shall perform visual inspections of a representative portion of all incoming scrap shipments to ensure scrap materials meet the requirements of both MSS's Materials Acquisition Program and US Pipe Scrap Selection and Inspection Program. MSS inspections shall consist of a visual observation of random scrap shipments to ensure that the scrap material, to the extent practicable, does not contain free flowing liquids, visible mercury switches, visible lead wheel weights, or visible battery parts.

Scrap materials containing free-flowing liquids, visible mercury switches, visible lead wheel weights, or visible battery parts are rejected.

Scrap broker is not on site during business hours when scrap is delivered. Scrap selection and inspection program by MSS has the same scope as that of facility representatives' inspections.

If US Pipe representative's inspection warrants a scrap rejection, US Pipe will call the scrap broker about the rejection and the reasons for the rejection.

US Pipe employees are given verbal instructions (training) once a year to ensure they know and understand work practice standards and metal management procedures. A review of procedures with the employees is also done whenever there is a change in scrap specifications (e.g., a change in spec's for scrap sizes).

Sampling and analyzing of scrap metal as per delivery is not conducted; however, once scrap metals have been melted and become a molten iron, cup samples are taken and analyzed for the metal chemistry in an Spectro

machine. If metal chemistry problem is encountered and the scrap metal delivered is the suspect, a sample is taken from the scrap pile to be analyzed for metal chemistry in an Specto machine.

C. Management Practices to Reduce Fugitive Emissions– Metal Management

Describe control measures to minimize fugitive emissions from scrap or unprocessed metal.

1. Footprint of the scrap metal pile has been reduced and scrap materials are stockpiled close to S-1 Cupola charging area. This measure eliminates the double movements of the scrap metal thus, reducing fugitive emissions from the extra movement of the scrap material from one pile to another pile.

2. Scrap delivery is limited to times between 6:00 AM and 2:00 PM only. By curtailing the scrap delivery time, the duration of fugitive emission during deliveries is reduced to eight hours only, instead of more than eight hours.

3. A water truck is used routinely for dust control at least once a month, or whenever the roads become dusty.

4. A street sweeper vehicle is used routinely to sweep the yard at least once a week, or whenever the roads become dusty.

402.3 Furnace Operations

B. Description of Operations - FURNACE O

Section #	Furnace Name and Manufacturer/ Model #	District S# a Applicabl NESHAP Section	Abatement Monitored	Monitoring Parameters
1	Cupola	S-1 NESHAP for Iron Steel Foundries A Sources, Section 63.10895 et seq	☒ Yes ☐ No	Continuous temperature monitor; A-3 Afterburner temperature at 1550 deg F whenever S-1 Cupola is in operation Daily A-13 visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour Continuous A-13 Baghouse differential pressure monitor; maintain prerssure differential between 0.25 to 8 inchesof water column Daily preventive maintenance records for A-13 Monthly inspection of A-13 baghouse (NESHAP) Semi-annual opacity testing (Method 9) for fugitive emissions from furnace building (NESHAP) Weekly preventive maintenanace records for A-10 Weekly A-10 visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour A-13 Source test for Particulate Matter every five years
2	Annealing Oven	S-15 None	☐ Yes ☐ No	Monthly visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour
			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions- FURNACE OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for furnace operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	Afterburner-North American 214-8A	Clean/scrape dust buildup Replace thermocouples as needed	Clean every eight weeks
2	Baghouse-GMD Model #289-14-6WI Baghouse has no broken bag leak detectors	Baghouse inspection Baghouse cleaning cycles and bag changes Clean/empty hoppers	Daily inspection of the double flap airlocks for continuous operations; checking of screw conveyor if working; checking for system air leaks; checking for static pressure and baghouse differential pressure; checking the smokestack for any visibles;. The baghouse cleaning cycle is based on baghouse differential pressure. Baghouse will start cleaning when the preset diffrentail pressure (3 IWC) is attained, Daily cleaning/emptying of baghouse hoppers; sweeping of the floors and cleaning the area
3	Baghouse-Harsell Baghouse (Custom Built) Baghouse has no broken bag leak detectors	Baghouse Inspection Clean/empty hoppers	Weekly inspection of the baghouse; checking if dampers open and close; checking for compressed air leak; checking for excessive ID fan vibration; visual inspection of shakers;checking

			baghouse differential pressure. The baghouse cleaning cycle is based on timer. Baghouse will start cleaning at preset times: 3 seconds shake for one section and 10 minutes break; then 3 second shake for the second section and 10 minutes break, etc. (Drum Switch Cycle). Clean/empty at least once a year.

C. Management Practices to Reduce Fugitive Emissions - FURNACE OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Cleaning of baghouse berm area and pavement.	This is a housekeeping activity to keep the area clean from dust coming from loading/unloading of scrap metals and foundry operations.	Daily; once a day at end of production.

402.4 Forging Operations

B. Description of Operations - FORGING

Section #	Equipment Name and Manufacturer/ Model #	District S# and Applicabl NESHAPs Section	atement	Abatement Monitored	Monitoring Parameters
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - FORGING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for forging operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - FORGING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.5 Casting and Cooling Operations

B. Description of Operations - CASTING

Section #	Name of Pouring and Cooling Operations and Manufacturer/ Model #	District S# Applical NESHA Sectio	Abatement Monitored	Monitoring Parameters
1	Casting Machine #171 (Model- Custom Built)	FS-44 District I No Applicable NESHAPs	☐ Yes ☐ No	
2	Casting Machine #172 (Model-Custom Built)	FS-45 District I No Applicable NESHAPs	☐ Yes ☐ No	
3	Casting Machine #173 (Model-Custom Built)	FS-46 District I No Applicable NESHAPs	☐ Yes ☐ No	
4	Casting Machine #174 (Model-Custom Built)	FS-47 District I No Applicable NESHAPs	☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Describe the method to verify adequate cooling times are achieved to ensure minimization of fugitive emissions of particulates and odors prior to commencing shake out operations.

Our casting is done inside steel molds in the casting machines. The bell-shape-end of the pipe is the only part made of core sand mold. This sand mold is broken when the cast pipe is pulled out from the casting machine by means of a mechanical pipe puller at the end of the casting cycle. There is no shake-out operations.

Our casting machines have a cooling cycle by design and we do not have to wait an extra time to cool the sand mold. As soon as casting machine goes downhill after spinning the molten iron to make it hard enough, the cast pipe is pulled out from the steel mold by the mechanical pipe puller.

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for casting and cooling operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Sweeping/cleaning of the casting machines area	Clean the area to reduce dust and fugitives	Daily: Once a day at the end of production.

402.6 Shake Out Operations

B. Description of Operations - SHAKE OU

Section #	Name of Shakeout Operations and Manufacturer/ Model #	District S Applica NESHA Sectio	Abatement Monitored	Monitoring Parameters
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - SHAKE OUT OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for shake out operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions- SHAKE OUT OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.7 Finishing Operations

B. Description of Operations - FINISHING

Section #	Type of Operation	District S# and Applicable NESHAPs Section	atement	Abatement Monitored	Monitoring Parameters
1	☐ Grinding ☐ Welding ☒ Other: Cutting	S-12 (District Exempt) NESHAP Not Applica	e	☒ Yes ☐ No	Presure Drop Monitor. Bags are cleaned when pressure reaches 5.12 inches of water column.
2	☒ Grinding ☐ Welding ☐ Other:	S-13 (District Exempt) NNESHAP Not Appli	e	☐ Yes ☒ No	None. Bags are cleaned manualy at end of production whenever this baghouse is used.
3	☒ Grinding ☐ Welding ☐ Other:	S-14 (District Exempt) NESHAP Not Applica	e	☒ Yes ☐ No	Presure Drop Monitor. Bags are cleaned when pressure reaches 6 inches of water column.
4	☐ Grinding ☐ Welding ☒ Other: Cutting	S-30 (District Exempt) NESHAP Not Applica	e	☐ Yes ☒ No	None. Bags are cleaned manualy at end of production whenever this baghouse is used.
5	☐ Grinding ☐ Welding ☒ Other: Sand Blasting	S-7 NESHAP Not Applica	e	☐ Yes ☒ No	None. Bags are cleaned continuously during production and hopper is emptied daily at the end of production.
6	☒ Grinding ☐ Welding ☐ Other:	FS-59 (District Exemp NESHAP Not Applica	e	☐ Yes ☒ No	None. Settling chamber is cleaned once a day at the end of production. Filters are cleaned once a week at the end of production.
7	☐ Grinding ☐ Welding ☒ Other: Surface Coater	S-17 (Surface Coater) NESHAP Not Applica		☐ Yes ☒ No	
	☐ Grinding ☐ Welding ☐ Other:			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions- FINISHING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for finishing operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	A-7 Baghouse-Donaldson Model # DFT2-4 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned when pressure reaches 5.12 inches of water column
2	A-8 Baghouse- Model LMC FSD-258 Baghouse has no broken bag leak detectors	Baghouse cleaning and filter bag change	Bags are cleaned manualy at end of the day when baghouse is used.
3	A-18 Baghouse-Torit Downflo Model # DFT2-4 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change,	Bags are cleaned when pressure reaches 6 inches of water column.
4	A-8 Baghouse- Model LMC FSD-258 Baghouse has no broken bag leak detectors	Baghouse cleaning and filter bag change	Bags are cleaned manualy at end of the day when baghouse is used.
5	A-5 Baghouse- Rees Model #3-700 Baghouse has no broken bag leak detectors	Baghouse cleaning and filter bag change	Bags are cleaned continuously during production and hopper is emptied daily at the end of production.
6	FA-22 Dust Collector-Torit Model #84 Dust collector has no broken bag leak detectors	Dust collector chamber and filter cleaning	Dust settling chamber is cleaned once a day at the end of production. Filters are cleaned once a week at the end of production..
7	Not Applicable	Use of a low VOC (less than 1 lb/gal VOC) coating material.	Not Applicable

C. Management Practices to Reduce Fugitive Emissions - FINISHING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Cleaning of the Finishing area that includes the floors of the pipe grinders, pipe cutters and sand blaster.	The area is cleaned to reduce the amount of potential airborne material from the area	Monthly: Once a month.

402.8 Sand Reclamation

B. Description of Operations - SAND REC

Section #	Name of Sand Reclamation Equipment and Manufacturer/Model #	District S# a NES Sec	Abatement Monitored	Monitoring Parameters
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	
			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - SAND RECLAMATION

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for sand reclamation making operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - SAND RECLAMATION

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.9 Dross and Slag Management

B. Description of Operations - DROSS A

Section #	Material	Describe Location for Cooling oftoring Parameters	Material Disposition
1	Dross	Dross-Not applicable	☐ Offsite Recycling ☐ Offsite Disposal ☐ Onsite Reprocessing
2	Slag	Cupola slag is a by-product ma comes out on top of the molten comes out from the Cupola aft The Cupola slag is skimmed of through by gravity and drops to that conveys the slag into the g outside the Melting building. slag conveyor has a water hose to cool the slag and to minimiz cupola slag that accumulates o is then stockpiled and sprinkle to further cool the slag and to r dust, as required. The desulfurization slag is ano product material that comes ou the molten iron after the molte treated with lime to remove the The desulfurization slag is skin from the treating ladle by gravi to an open vessel inside the Me building where it is cooled witl No water is used for the desulfi slag. The vessel is then emptie Melting building to further coo with ambient air prior to its off shipment.	☐ Offsite Recycling ☒ Offsite Disposal ☐ Onsite Reprocessing

C. Management Practices to Reduce Fugitive Emissions - DROSS AND SLAG MANAGEMENT

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for dross and slag operations.

Section #	Abatement Device and Manufacturer/ Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - DROSS AND SLAG MANAGEMENT

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Use of water spray and water sprinkler	To cool the slag and to reduce dust	Daily: Once a day during operation
2	Stock piling of slag material.	To organize slag material into one pile prior to its offsite shipment. This reduces the size of the slag footprints by keeping one pile instead of several piles of materials.	Daily: Once a day during operation
3	Shipping of slag material offsite.	To maintain low inventory of slag material thus reducing the amount of potential airborne material	Daily: Shipping of the slag material daily when truck volume is attained and the material is no longer hot.

D. Description of Abatement and Contro

Provide a comprehensive list of all abatement . If the abatement equipment abates multiple sources, provide a detailed description of how

Section #	Name of Abatement Equipment	Description of Abatement
1	Afterburner-North American 214-8A	ion chamber that burns carbon monoxide and other mount oil from scrap materials.
2	Baghouse-REES Model #3-700	iculates
3	Baghouse-Donalson Model #DFT2-4	
4	Baghouse-LMC Model FSD-258	
5	Baghouse-Harsell Model	
6	Baghouse-GMD Model #289-14=6WI	
7	Baghouse-Torit Downflo Model #DFT2-4	
8	Baghouse-Saunco Model #S10-108-1449	
9	Dust Collector-Torit Model #84	

Technical Data

12-13-403.1

A. *Process Flow Diagram* – Facilities must indicate all operations in Section 12-13-402, the flow of materials used and identify all monitoring of processes, abatement and controls to minimize emissions beginning from material receipt to achievement of final product. Identify all abatement and control devices by District source numbers according to District Permit or as exempt from District Permit.

B. *Facility Layout / Floor Plan* - Facilities must indicate all relative locations of processing equipment and monitoring and controls, all permitted and exempt sources identified in the process flow diagram per Section 12-13-403.1.1 and any other source(s) that may contribute to particulates and odors. Include all building walls, partitions, doors, windows, vents and openings and indicate all areas that have abatement for particulates and odors. Identify all metal melting and processing equipment by District source numbers according to District Permit or as exempt from District Permit.

A. Process Flow Diagram

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B. Facility Layout / Floor Plan

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Fugitive Emissions Reductions Previously Realized

12-13-403.2

Facilities must provide a description of the equipment, processes and procedures installed or implemented within the last five years to reduce fugitive emissions. Include the purpose for implementation and detail any employee training that was conducted for that equipment, process or procedure and the frequency of any ongoing training.

12-13-403.2 FUGITIVE EMISSIONS PREVIOU				
Section #	Identify Type of Operation per Section 12-13-402	Description of Procedure	oyee ning ucted	Description of Employee Training and Frequency of Training
1	Metal Management and Slag Management	Use of Street Swee Street Sweeper	s	
2	Metal Management and Slag Managementt	Use of Water Truck Puchased Ford Mod	s	
3	Slag Managementt	Use of Slag Convey conveyor	s	
4	Metal Management and Slag Managementt	Use of Inventory C piles and waste slag possible minimum	s	
5	Metal Management and Slag Managementt	Use of concrete pav scrap materials and Cleaning more freq minimize dust build	s	
6	Furnace Operations	Installed new GMD Baghouse	s	Employees are trained on baghouse operation and inspection once a year.
7	Metal Management and Slag Managementt	Use of tire shaker t Use of speed bump the plant.	s	
8	Slag Management	Use of water spray/	s	
9	Slag Management	Replaced calcium c as desulfurizing age	s	

Schedule for the Implementation of the EMP Elements

12-13-403.3

A. Provide a list of existing or current EMP elements in place pursuant to and under a District Authority to Construct as of the initial date of EMP submittal (on or before May 1, 2014). Include a description, the purpose and schedule of the element(s).

B. Provide a list of new or future EMP elements to be implemented following APCO approval of the EMP. Include a description, the purpose and schedule of the element(s) to be implemented.

A. 12-13-403.3.1 SCHEDULE FOR THE				
Section #	Identify Type of Operation per Section 12-13-402	List Spec		Purpose of Implementation

B. 12-13-403.3.2 NEW OR FUTURE EMP ELEMENTS TO BE IMPLEMENTED

Section #	Identify Type of Operation per Section 12-13-402	List Specific Elements to be Implemented Following APCO Approval of the EMP	Implementation Date	Description of Elements to be Implemented	Purpose of Implementation
1	402.2 Metal Management	Replace old concrete pavement in the yard.	September 2014	Replace concrete pavement in the yard between cupola baghouse and shipping area.	Reduce fugitive dust coming from the crevices of the old pavement.

Compliance Schedule for the EMP

12-13-404

A. *APCO Recommendations to EMP and Determination of Approvability–* Acknowledge acceptance or rejection of each of the APCO's recommendations. For each of the accepted recommendations, describe the measures to be implemented and include the date of proposed implementation. If the facility rejects a recommendation, provide a detailed basis for that rejection.

A. APCO Recommendations to EMP and Determination of Approvability (12-13-405) Date of EMP: **5/19/15**

Provide determination of acceptance to APCO recommendations. Include the determination of acceptance by the facility's Responsible Manager and the basis for rejecting any APCO recommendations. If recommendation is accepted, include measures to implement APCO recommendation and the proposed date of implementation.

Section #	(FOR APCO USE ONLY) APCO Recommendation	Acceptance of APCO Recommendation	If NO: Basis for Rejecting APCO Recommendation	If YES: Measures to Implement Recommendation	Proposed Date of Implementation	(APCO USE ONLY) APCO Approval of Response
I	Capture and abate emissions from the ladle transfer operation(s). Consider abating emissions through an existing baghouse(s) at the facility.	☐ Yes ☒ No	NO: Installation of capture hoods and ductwork for melting and casting operations presents significant design challenges. The molten metal pouring and transport ladle fugitive emissions points are located under roof inside a large industrial building. Due to the need for clearance for overhead crane travel and for maintenance access to equipment, dust collection must be accomplished above the overhead cranes. Because of this, air volumes that would need to be captured and controlled are massive. In 2006, US Pipe studied options for controlling molten metal pouring and transport fugitive emissions sources at a sister foundry with a similar production arrangement and similar logistical design challenges. An engineering firm was hired and developed budgetary cost estimates for five different fugitive emissions control scenarios. The capital cost estimates alone (excluding annual operating expenses) for five different sized air pollution control system options were: $2,700,000 for a 170,000 acfm system; $3,300,000 for a 220,000 acfm system; $4,000,000 for a 360,000 acfm system; $7,000,000 for a 400,000 acfm system; and $10,000,000 for a 600,000 acfm system. The range of annual PM2.5 emissions reductions in this study was between 4 to 6 tpy. We believe the budgetary cost estimates obtained from engineering design work at a similar out-of-state foundry is representative of the range of costs it would take to control fugitive emissions from molten metal pouring and transport at the Union City Foundry.			☒ Yes ☐ No

			Conclusion: The cost of installing new additional fugitive emissions capture and control equipment for ladle transfer operations is not reasonable for the minimal emissions reductions that would be realized.			
2	Enclose, capture and abate emissions from the mold/core making operation.	☐ Yes ☐ No		PARTIAL: Investigate the availability, efficiency and cost of alternative odor free core sand binders rather than installing an enclosure and abatement. Annual VOC emissions from the core making process is estimated to be less than 1/2 ton per year. Core making is accomplished by heating resin coated sand in a core box. Finished cores are removed by hand and placed on a conveyor. Operators working the machines need to have clear line of sight and full access to the core machines, therefore enclosure would be challenging. We do not have a cost estimate for installing new enclosure, capture and control equipment. However, we believe installing new fugitive emissions capture and control equipment for core making operations is not reasonable for the minimal emissions reductions that would be realized. ***District Response:*** *Confirm that the evaluation of alternative odor free core sand binders will be completed by January 2018.*	01/2018	☐ Yes ☒ No
				The evaluation of alternative odor free core sand binders will be completed by May 1, 2017.	By 05/01/2017	☒ Yes ☐ No
3	Install bag break detectors and audible alarms at all baghouses.	☐ Yes ☐ No		PARTIAL: Install a broken bag leak detector in the Cupola baghouse outlet duct work. ***District Response:*** *Explain the basis for not including bag break detectors and alarms at all other baghouses.*	01/2017	☐ Yes ☒ No

				The cost to install broken bag leak detectors at all other baghouse is not cost-effective; the cost-to-benefit ratio has not been proven in smaller baghouses. Instrumentation is expensive to purchase and install and it can fail or generate false readings or alarms. Because the foundry is staffed during time of operations, and all machines are located in close proximity where any one employee can monitor any given machine by walking right up to it several times in an 8-hr shift, we feel strongly that all BAAQMD or EPA Approved visual observation methods are acceptable and effective particulate minimization techniques.	01/2017	☒ Yes ☐ No
4	Enclose area where cupola slag and desulfurization slag are stored.	☐ Yes ☐ No		PARTIAL: Install a new metal shed / enclosure with adequate equipment and personel access in the slag storage area. Evaluate if the shed / enclosure actually reduces fugitive emissions without causing production or personel safety issues.	1/2018	☒ Yes ☐ No
5	Pave all unpaved areas that are used to transport and store scrap metal.	☐ Yes ☐ No		PARTIAL: Road paving projects in different areas of the Plant that will be spread over a period of time starting next year. ***District Response:*** *Specify which areas are to be paved and detail the schedule of paving projects. Describe if these areas are being repaved as routine maintenance or are new pavement over dirt roads/areas.*	01/2016 to 01/2020 amount per year contingent on market conditions	☐ Yes ☒ No
				Approximately 4,000 square feet of dirt road located outside the Paint and Packaging Area will be paved. (see attached map) - redacted from public version	01/2016 to 01/2017	☒ Yes ☐ No
6	Consider including asphalt coating operations in the EMP and include the measures or controls to minimize emissions from this operation.	☒ Yes ☐ No		YES: US Pipe will continue to use a low VOC content pipe coating at the Union City Foundry. The Foundry's Air Permit and BAAQMD Regulation 8-19-302.2 allow for use of coating containing up to 2.8 lb VOC / gal coating. U.S. Pipe uses a coating that contains less than 0.9 lb VOC / gallon. We are willing to update the EMP to reflect the use of low VOC coating. ***District Response:*** *Please confirm that an update will*	01/2016	☐ Yes ☒ No

				be provided in the EMP that includes the low VOC coating.		
		☐ Yes ☐ No		The EMP has been updated to reflect the use of a low-VOC coating paint material in the Paint and Packaging Area (This is described in the Finishing Section of the EMP).	On-going	☒ Yes ☐ No
7	To ensure fugitive emissions are minimized, evaluate all open vents and doors and identify which openings can be closed when not in use. Include the results from this evalution as future measures to reduce fugitive emissions when updating the EMP per Section 410.	☐ Yes ☐ No		PARTIAL: Replace broken glass windows in the Main manufacturing buildings. ***District Response:*** *In addition to routine maintenance, please identify the evaluation to be conducted and the schedule for completing the evaluation.*	01/2016 to 01/2017	☐ Yes ☒ No
		☐ Yes ☐ No		The evaluation has been completed and was based on visual checks on the conditions of the existing windows throughout the Main manufacturing buildings. US Pipe will replace broken windows and will install new windows in areas that used to have windows but are now missing.	01/2016 to 01/2017	☒ Yes ☐ No

Appendix

If additional information are to be included in the EMP, identify the associated Appendix # as "*#*" in the text box of the specific table.

In the table below, note the Appendix # and provide the Page # and Section # of the EMP where the material references.

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Appendix # 1

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