CITY COUNCIL

INFORMATION CALENDAR
May 26, 2015

TO: Honorable Mayor and Members of the City Council

FROM: Councilmembers Linda Maio and Lori Droste

SUBJECT: Status Report: Berkeley Asphalt; Pacific Steel Casting: Air Quality Inquiries

INTRODUCTION

On January 20, 2015, the Berkeley City Council passed the following actions:

1. Councilmembers Linda Maio and Lori Droste to work with residents, businesses, and City Staff to review complaints and make good faith efforts to mitigate impacts in the areas where the City has authority such as noise and odors and to bring their findings back to City Council.

2. Direct the City Manager to enforce the terms of the Use Permit and the 1999 Settlement Agreement with the Oceanview Neighborhood Association.

3. If the City Manager and delegated staff or department finds the West Berkeley Lehigh Asphalt Company plant is not compliant with the Use Permit or the 1999 Settlement Agreement with the Oceanview Neighborhood Association, the City and its jurisdictional bodies or the appropriate authority implements corrective action and enforces the 1999 Settlement Agreement Use Permit immediately.

CURRENT SITUATION AND ITS EFFECT

On January 20, 2015, the City Council tasked Councilmembers Maio and Droste to review complaints made regarding air quality in West Berkeley. Subsequently, Councilmembers Maio and Droste discussed concerns with residents.

The City of Berkeley's Economic Development Department aided in scheduling site visits to both businesses. During these site visits, we discussed resident concerns, the 1999 Settlement Agreement with Berkeley Asphalt, and reviewed various operational standards of both industrial companies.

FINDINGS

Neighborhood Concerns

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Councilmember Droste met with several groups of residents to review their concerns regarding industry in West Berkeley. Concerns largely fell into the following five categories:

1. Public health
2. Regulatory bodies
3. Reporting protocol
4. Business practices
5. Information access

Public health
All of the residents interviewed shared the concern of odorous and non-odorous emissions on the community at large, particularly children in nearby homes and schools. In addition to these environmental and physical health concerns, some residents expressed increased anxiety when smelling odorous emissions. Another resident also stated that she was interested in the City's disaster preparedness plan in the industrial areas where hazardous materials (i.e. liquid oxygen) are common.

Regulatory bodies
Many residents are concerned that industry in West Berkeley is violating local, state, and federal regulations, specifically the EPA Clean Air and Water Act and OSHA standards. Some residents also expressed interest in operations oversight and whether there are appropriate resources to inspect and mitigate concerns. In particular, there is a general concern over enforcement procedures and penalties if a violation occurs. The residents feel that the odors and occasional noise disturbances constitute a nuisance as defined by Code 23B.64.020. Furthermore, a few residents stated their concern over whether the Council-adopted Community Environmental Advisory Commission recommendation from March 13, 2007, was examined and acted upon.

Reporting protocol
Residents expressed displeasure over the air quality complaint process through Bay Area Air Quality Management District (BAAQMD). Complaints focused on the following issues:

- The three notices of violation in 30 days for a public nuisance declaration is too lenient.
- The five confirmed complaint threshold per day is insufficient.
- Complaint lines with investigators are not available at all hours.
- Complaint forms should be more detailed.
- Residents are limited to one complaint a day.
- Residents must be home and interact with an inspector if a complaint is logged. Often a smell has dissipated once an inspector has arrived.
- The perception that public official complaints have more weight than residential complaints.
- Individuals under 18 can't file a complaint.
- Reliance on an inspector's sense of smell is not scientific.

Businesses practices
Several residents claim that some industries in West Berkeley may not be following protocols for good business. Namely, they seem to be concerned that weekend and after-hour operations disturb residents.

Information Access
Residents feel that they were not notified of the impacts of existing industry when purchasing or renting their homes. Overall, these residents are unclear about what substances are contained in the emissions.

Site Visits and Current Practices
Pacific Steel & Casting Company, LLC (PSC)
On March 3, 2015, Councilmembers Maio and Droste visited PSC, took a tour and met with management to discuss business practices and general resident concerns. Attached is PSC's most recent Emissions Minimization Plan (Attachment 1).

Lehigh Hanson Berkeley Asphalt
On March 27, 2015, Councilmembers Maio and Droste visited Berkeley Asphalt, took a tour and met with management, and went over the 1999 Settlement Agreement in detail. The City Manager's Office is still in the process of reviewing that agreement. The following is a summary of what was discussed:

- *How are the factories prepared to handle a hazardous explosion in the area?*
  Berkeley Asphalt trains their employees annually to handle hazardous materials onsite, which includes Hazardous Communications. As part of site specific training, they notify all persons on site of designated emergency evacuation meeting point.

- *When do the factories operate?*
  Berkeley Asphalt's permit allows them to operate 24 hours/day. The most common operating hours are 7:00AM to 3:00PM M-F. If they have production on the weekend or at night, Councilmember Maio and the Deputy City Manager are notified. These off-shift operations usually occur during the summer and fall, which is historically the busiest production period.

- *Has the asphalt company updated any technology to accommodate the warm mix?*
  See the attached information on the MAXAM AquaBlack system (Attachment 2). This technology is fully implemented.

- *How is equipment modernized or kept up to date?*
  In order to be sure equipment is operating properly, oil samples are taken monthly, and vibration testing occurs twice a year. Equipment is replaced as it wears with like-for-like replacement equipment or with improved technology.

- *Is Berkeley Asphalt compliant with the 1999 Settlement Agreement?*
  Here is a review of current practices:
    - Distinguishing appropriate truck routes (haul routes):
        - Bilingual notices including a map to customers and suppliers about appropriate truck routes and a process to ensure the routes are followed.
        - Signs at the facility direct drivers where to go and of correct routes.
    - Noise mitigation:
        - All employees receive a notice about the use of each of the following pieces of noise mitigation equipment:
            - Sound barrier along eastern side
            - Sound attenuators
            - Sound absorbing barriers
                - Bucket elevator head
                - Screen deck tower
                - Slat conveyor head
                - Barriers covering aggregate bin wall and pugmill
            - Air exhaust valve mufflers (20 throughout the plant)
            - Exhaust stack tubular power flow silencer
            - Installed “white noise” back-up alarm on the loader (much quieter than conventional back-up alarms)
    - Tarping:
        - A notice to customers and suppliers includes a recommendation that they tarp their loads. Tarping does not mitigate odors but prevents material from spilling out.
    - Current emissions monitoring:
        - Berkeley Asphalt conducts tests (Attachment 3) at least every two years as required by the BAAQMD permit.
        - Berkeley Asphalt contracts with a dust mitigation company whose equipment is on site

Additionally, in 2013, Berkeley Asphalt made process improvements. A list of those recommendations and accompanying changes is attached (Attachment 4).

<u>FUTURE ACTIONS</u>
Councilmembers Maio and Droste have requested a meeting with BAAQMD to answer the following questions:

- What are the odorous and non-odorous emissions from the industries in West Berkeley, what is their cumulative toxicity level, and what can be done to curb them?
- What studies have been done/could be done to examine the cumulative impact of emissions in West Berkeley?
- How can the air quality complaint process be altered to be more user-friendly and efficient?

- Why are inspectors not available 24-7?
- What training do inspectors receive?
- How to inspectors trace the source of an odor and what is then done to mitigate the odor?
- What sampling tools do inspectors use?
- Why can residents only make one complaint a day?
- Why must residents remain home and interact with an inspector if a complaint is logged?
- Why can't minors file a complaint?
- What alternatives to a subjective smell test are available?

RECOMMENDED ACTION

Councilmembers Maio and Droste will submit a complete report on their findings and recommendations to Council before the summer break.

CONTACT

Councilmember Linda Maio, District 1, 510-981-7110
Councilmember Lori Droste, District 8, 510-981-7180

Emissions Minimization Plan

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

Pacific Steel Casting Company LLC

District Site #187, 703, 1603
1333 Second Street
Berkeley, CA 94710

Table of Contents

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: _____ *Dated:* 1/11/15

Krishnan Venkatesan, Chief Operating Officer

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
Organization Chart / Appendix A	This section is business confidential for security reasons and since their disclosure may give competitors and economic advantage. No bearing on air emissions.
Schedule of Operations / Pg 12	This section is business confidential for security reasons.
Mold and Core Making Operations / Page 14-18	Binders used at the facility are business confidential since their disclosure may give competitors and economic advantage
Description of Operations-Mold and Core Making Operations / Page 20	The Binders, Mix Ratio & MSDS information is propriatary
Appendix C All pages	Plant Layout is business confidential for security reasons and since their disclosure may give competitors and economic advantage

Company Description

Pacific Steel Casting Company LLC purchased Pacific Steel Casting Company. The tranfer of assests was completed on August 29, 2014

Pacific Steel Casting Company LLC (PSC LLC) has three (3) separate steel foundries, which are located within a two-block area in Berkeley, California. They are generally referred to as Plant 187, Plant 703 and Plant 1603. The facilities are located in the Berkeley manufacturing and industrial area. Other industrial facilities such as a forging manufacturer, pattern shop, machine shop, railroad lines, and brewery are also located near PSC LLC. Further, PSC LLC is located adjacent and close to a major East Bay freeway.

PSC LLC produces high quality steel casting using different sand molding processes. Thousands of custom-made parts are produced at PSC LLC that are used in everyday lives by individuals and businesses. PSC LLC cast steel parts can be found in bridges, wheelchair lifts, truck parts, agricultural equipment, valves for sanitary sewers, public water systems, the oil and gas industry, landfill compactors and, in the structural aspects of buildings.

PSC LLC employs over 400 employees. Most of them are union members of the Glass Molders and Plastics Union, Local 164. Many of PSC LLC employees are second or third generation foundry employees. More than 85% of PSC LLC employees live near PSC LLC commuting within 15 miles or less. Employees from PSC LLC participate in health and welfare and pension benefits.PSC LLC maintains an excellent safety and health record. PSC LLC regularly works with material manufacturers to develop better and lower emitting products.

PSC LLC purchases scrap metal from qualified vendors. The scrap is melted into metal that are alloys of steel. The molten steel is poured into sand molds. This is the basic sand mold method of producing castings. The metal inside these molds cools and hardens to form the castings. Once the castings have cooled and adopted their forms, they are sent to the shakeout station in which the sand is separated from the casting both internally and externally. Sand from the shakeout station is transferred to a reclamation unit where it is cleaned of material and processed for reuse. This sand reuse conserves tons of new sand that would otherwise be needed and eliminates tons of sand from landfill disposal. The sand reclamation unit at PSC LLC is, and always has been, state of the art equipment. The cooled castings are next sent to the finishing department before going to the shipping department.

In general, each Company plant produces steel castings using sand molding processes that are best suited for the design and size of the casting made at that plant. The binders are mixed with the sand and are used to harden the sand chemically with or without external heat.

Plant I87 began operations in the 1930's making medium sized castings using primarily the Green Sand molding process. The binder for green sand molds is a combination of clay, water, and cornstarch compacted to form the necessary molds.

Plant 703 began operations in 1975. This plant uses a Shell process for the molding system. This sand molding process uses a binder mixed with the sand and baked to form the necessary molds and cores for the castings.

Plant 1603 began operations in 1981. This plant primarily uses a phenolic urethane binder, which is a chemical binder mixed with the sand.

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

In Appendix A - Confidential

B. Schedule of Management Operators

Onsite Responsible Manager(s)

Name: Confidential
Title: Environmental, Health & Safety Director
Phone: Confidential
Email: Confidential
Schedule/Shift: Confidential

Name: Confidential
Title: Chief Operating Officer
Phone: Confidential
Email: Confidential
Schedule/Shift: Confidential

Onsite Alternate Contact(s)

Name: Confidential
Title: Environmental Technician
Phone: Confidential
Email: Confidential
Schedule/Shift: Confidential

Name: Confidential
Title: Supervisor
Phone: Confidential
Email: Confidential
Schedule/Shift: Confidential

Name: Confidential
Title: Supervisor
Phone: Confidential
Email: Confidential
Schedule/Shift: Confidential

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	Confidential
☒ 402.2 Metal Management	Confidential
☒ 402.3 Furnace Operations, including tapping and pouring	Confidential
☐ 402.4 Forging Operations	N/A
☒ 402.5 Casting and Cooling Operation	Confidential
☒ 402.6 Shake Out Operations	Confidential
☒ 402.7 Finishing Operations	Confidential
☒ 402.8 Sand Reclamation	Confidential
☒ 402.9 Dross and Slag Management	Confidential

402.1 Mold and Core Making Operations

B. Description of Operations - MOLD AND CORE MAKING OPERATIONS

Section #	Equipment Name and Manufacturer /Model #	District S# and Applicable NESHAPs Section	NAME OF MATERIALS USED IN MOLDING OPERATIONS					ABATEMENT					
			Binders	Coatings	Adhesives	Mold Release Agents	Other	Source abated	Abatement Required by Permit	A#	Type of Abatement and Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	187- 4 Mold machine British Molding Machines BMM CT 3	Exempt 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
.2	187 - 2 Squeezer machines SPO	Exempt 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
3	187 - 2 Molding machines BMM CT 6	Exempt 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
4	187 - 2 Core machine Dependable 400 FA, 200SA	Exempt 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
5	187 - 2 Core machines Redford HS 22 RA	Exempt 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
6	187 - 6 Core blower systems B & P CB 5	Exempt 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	
7	703 - 2 Shell Molding Machines DSM 3	703 S20, S24 40 CFR 63.10886	Confidential	NA	Confidential	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No	NA		☐ Yes ☐ No	

A. Description of Operations - MOLD AND CORE MAKING OPERATIONS

Section #	Equipment Name and Manufacturer /Model #	District S# and Applicable NESHAPs Section	NAME OF MATERIALS USED IN MOLDING OPERATIONS					ABATEMENT					
			Binders	Coatings	Adhesives	Mold Release Agents	Other	Source abated	Abatement Required by Permit	A#	Type of Abatement and Purpose of Abatement	Abatement Monitored	Monitoring Parameters
8	703 --Shalco Molding Machine DSM 3	703 S21 40 CFR 63.10886	Confidential	NA	Confidential	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No			☐ Yes ☐ No	
9	703 - 2 Shalco Molding Machines DSM 3	703 S22, S23 40 CFR 63.10886	Confidential	NA	Confidential	Confidential	NA	☒ Yes ☐ No	☒ Yes ☐ No	A7	Carbon Absorption Unit Odor Control	☒ Yes ☐ No	Pressure drop across Carbon units 1<P<9, Temp <110 F Odor level < 60 odor units
10	703 - 2 Beardsley & Piper core mach. SF 6 CA	703 S13, S14 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No			☐ Yes ☐ No	
11	703 - 4 Redford core machines HS 16 RA	703 S15, S16, S17, S18 40 CFR 63.10886	Confidential	NA	NA	Confidential	NA	☐ Yes ☒ No	☐ Yes ☒ No			☐ Yes ☐ No	
12	187 - Simpson Sand Muller 1.5	187 S-10 40 CFR 63.10886	Confidential	NA	NA	NA	NA	☒ Yes ☐ No	☒ Yes ☐ No	A10	Baghouse, Pulse Jet Particulate Matter	☒ Yes ☐ No	Weekly visual inspections of A10 are performed on the interior and exterior of the unit for mechanical integrity. The filter bags are visually inspected for rips/tears. Verification of pulse jet activity is verified weekly by the inspector.
13	187 - Omco Sand Mixer MS 1	Exempt 40 CFR 63.10886	Confidential	NA	NA	NA	NA	☒ Yes ☐ No	☐ Yes ☒ No	A-10	Baghouse, Pulse Jet Particulate Matter	☒ Yes ☐ No	Weekly visual inspections of A10 are performed on the interior and exterior of the unit for mechanical integrity. The filter bags are visually inspected for rips/tears. Verification of pulse jet

													activity is verified weekly by the inspector.
14	187 - Tinker Omega Sand mixer TOM 250	Exempt 40 CFR 63.10886	Confidential	NA	NA	NA	NA	☒ Yes ☐ No	☐ Yes ☒ No	A-10	Same as #12	☒ Yes ☐ No	Weekly visual inspections of A10 are performed on the interior and exterior of the unit for mechanical integrity. The filter bags are visually inspected for rips/tears. Verification of pulse jet activity is verified weekly by the inspector.

A. Description of Operations - MOLD AND CORE MAKING OPERATIONS

Section #	Equipment Name and Manufacturer /Model #	District S# and Applicable NESHAPs Section	NAME OF MATERIALS USED IN MOLDING OPERATIONS					ABATEMENT					
			Binders	Coatings	Adhesives	Mold Release Agents	Other	Source abated	Abatement Required by Permit	A#	Type of Abatement and Purpose of Abatement	Abatement Monitored	Monitoring Parameters
15	187 - B & P Sand Muller 75 B	187 S-8 40 CFR 63.10886	Confidential	NA	NA	NA	NA	☒ Yes ☐ No	☒ Yes ☐ No	A-1, A-7	Baghouse, Shaking into Carbon Adsorption Odors & Particulate	☒ Yes ☐ No	Pressure drop across Carbon units 1<P<9, Temp <110 F
16	703 - Shell sand coating system B&P Muller	703 S-5 thru S-12 40 CFR 63.10886	Confidential	NA	NA	NA	NA	☒ Yes ☐ No	☒ Yes ☐ No	A-4	Baghouse, Shaking Particulate	☒ Yes ☐ No	Daily - Visual inspection for filter and mechanical integrity and particulate Pressure drop across baghouse
17	1603 - Omco Sand Muller LAM 50	1603 S-14 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☒ Yes ☐ No	A-5, A-3, A-7, A-8	Dry filter, into Baghouse, Pulse Jet into Carbon Adsorption Odors & Particulate	☒ Yes ☐ No	A3 and A7 - Pressure drop across baghouses - 4.5<P<7; A5 - Visual inspection for filter integrity A8 - FID continuous monitoring At 50 ppm in a 90 minute average): Have full load carbon (52,000 lbs.) on standby within 3 business days. At 65 ppm in a 90 minute average change carbon no later than 7 calendar days. At 85 ppm in a 90 minute average - Cease shakeout operations immediately and pouring operations within 2 hours. Maintain Inlet Face velocity into cooling room, minimum 200 ft/min.
18	1603 - No Bake Molding System	1603 S18, S20 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☒ Yes ☐ No	A-3, A-7, A-8	Baghouse, Pulse Jet into Carbon Adsorption Odors & Particulate	☒ Yes ☐ No	A3 and A7 - Pressure drop across baghouses 4.5<P<7; Visual inspection A3 and A7 - Pressure drop across baghouses - 4.5<P<7; Visual inspection A8 - FID continuous monitoring At 50 ppm in a 90 minute average):

													Have full load carbon (52,000 lbs.) on standby within 3 business days. At 65 ppm in a 90 minute average change carbon no later than 7 calendar days. At 85 ppm in a 90 minute average - Cease shakeout operations immediately and pouring operations within 2 hours. Maintain Inlet Face velocity into cooling room, minimum 200 ft/min.
19	1603 - Kloster Core Sand Mixer Type 1	NA 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	A-3, A-7, A-8	Baghouse, Pulse Jet into Carbon Adsorption Odor & Particulate Matter	☒ Yes ☐ No	A3 and A7 - Pressure drop across baghouses - 4.5<P<7; Visual inspection A8 - FID continuous monitoring At 50 ppm in a 90 minute average): Have full load carbon (52,000 lbs.) on standby within 3 business days. At 65 ppm in a 90 minute average change carbon no later than 7 calendar days. At 85 ppm in a 90 minute average - Cease shakeout operations immediately and pouring operations within 2 hours. Maintain Inlet Face velocity into cooling room, minimum 200 ft/min.
20	1603 - Omco Core Sand Mixer HMC-5	NA 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	NA	Dynamic Air Pulse Cleaner Baghouse Particulate Matter	☒ Yes ☐ No	Daily - Visual Inspection - particulate
21	1603 - Omco Core Sand Mixer MS1	NA 40 CFR 63.10886	Confidential	Confidential	Confidential	Confidential	NA	☒ Yes ☐ No	☐ Yes ☒ No	A-3, A-7, A-8	Baghouse, Pulse Jet into Carbon Adsorption Odor & Particulate Matter	☒ Yes ☐ No	A3 and A7 - Pressure drop across baghouses - 4.5<P<7; Visual inspection A8 - FID continuous monitoring At 50 ppm in a 90 minute average): Have full load carbon (52,000 lbs.) on standby within 3 business days. At 65 ppm in a 90 minute average change carbon no later than 7 calendar days. At 85 ppm in a 90 minute average - Cease shakeout operations immediately and pouring operations

													within 2 hours. Maintain Inlet Face velocity into cooling room, minimum 200 ft/min.

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	Confidential	Confidential	No Bake Systems Plants 187 Cores & 1603 Molding & Cores	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
2	Confidential2	Confidential	No Bake Systems Plants 187 Cores & 1603 Molding & Cores	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
3	Confidential	Confidential	No Bake Systems Plants 187 Cores & 1603 Molding & Cores	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
4	Confidential	Confidential	Plant 703 - Core & Shell molding S13 - S24	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
5	Confidential	Confidential	Plant 703 - Core & Shell molding S13 - S24	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
6	Confidential	Confidential	Plant 187 - CO 2 Core Blower System	VOC CONTENT (%): Confidential PHENOL CONTENT (%): Confidential
7	Confidential	Confidential	Plant 187 Molding	VOC CONTENT (%): Confidential PHENOL CONTENT (%):

				Confidential
				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	187 A8 Baghouse Torit/22,000 cfm	1.Check manometer across baghouse 0<P<7. 2.Visual inspection - internal & external , check cartridge filter integrity and condition. 3.Replace cartridge filters based on inspection and/or changing manometer readings .	1.Weekly 2.SemiAnnual 3.As required, based on inspection
2	187 A7 Carbon Adsorption System Melrose/Blamer Eng. 60,000 cfm	Replace carbon and prefilters based on daily pressure readings across the carbon beds, prefilters and the semi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
3	703 A4 Shaker Baghouse Industrial Clean Air/3-700SW	1.Inspect & lube Shaker & Fan bearings, inspect & check sheaves & V belts 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse and replace bags as necessary. Wire brush fan blades.	1.Weekly 2.Quarterly
4	703 A7 Carbon Adsorption System Melrose	Replace carbon and prefilters based on daily pressure readings across the carbon beds, prefilters and the semi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
5	187 A10 Baghouse, Pulse Jet 5,600 cfm	1. Check pulse jet pressures 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3. Replace filter bags based on inspection and/or changing manometer readings .	1. Monthly 2. Quarterly 3.As required, based on inspection
6	187 A1 Baghouse, Pulse Jet Industrial Clean Air/30,000 cfm	Monitor carbon prefilters, troubleshoot if necessary. Inspection of the interior of baghouse for structural integrity and fabric bag condition. Replace filter bags as necessary.	Daily Quarterly

7	1603 A3 Baghouse, Pulse Jet Bahnson/Hawley/HE-378-10	1.Check Manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace bags based on inspection and/or changing manometer readings .	1. Monthly 2. Quarterly 3.As required, based on inspection
8	1603 A7 Baghouse, Pulse Jet Bahnson/Hawley/HE-378-10	Same as #7	1. Monthly 2. Quarterly 3.As required, based on inspection
9	1603 A8 Carbon Adsorption Melrose	Replace carbon and prefilters based on FID, steel output, pressure drops across carbon bed & prefilters checked daily	Permit required - FID >65ppm (PSC policy when FID outlet >20 ppm and/or >700 tons of steel processed)

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 mold & core rooms once per shift, at a minimum.	Contain particulate matter	On going
2	All paved outdoor areas are swept twice per day.	Storage bins containing used sand and/or broken molds are moved and stored outside. Storage areas are swept to remove any spilled or leaking sand, inorder to remove a potential source of airborne particulate matter.	Twice per day
3	Visually check exhaust stacks for particulate and dust.	Insure proper functioning of the baghouse, and identify presence of torn bags or bags that have fallen off.	Daily

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	Ferrous Feed Stock (Incoming Scrap) - 100% recycled scrap steel	☒ Ferrous ☐ Non-Ferrous	All 3 plant scrap yards, yearly random sampling of all vendors - composition verified using Optical Emission Spectrometer and carbon anlyzer testing equipment.
2	Ferrous Feed Stock (After Melting) - 100% recycled scrap steel	☒ Ferrous ☐ Non-Ferrous	All Heats- composition verified using Optical Emission Spectrometer and carbon analyzer testing equipment. Off specification material identified by heat analysis initiates additional testing of the feed stock in the scrap yard storage.
3	Ferro Chromium	☒ Ferrous ☐ Non-Ferrous	Product certified by vendor
4	Ferro Manganese	☒ Ferrous ☐ Non-Ferrous	Product certified by vendor
5	Ferro Molybdenum	☒ Ferrous ☐ Non-Ferrous	Product certified by vendor
6	Ferro Vanadium	☒ Ferrous ☐ Non-Ferrous	Product certified by vendor
7	Nickel	☐ Ferrous ☒ Non-Ferrous	Product certified by vendor
8	Molybdenum Trioxide	☐ Ferrous ☒ Non-Ferrous	Product certified by vendor
9	Silicon Manganese	☐ Ferrous ☒ Non-Ferrous	Product certified by vendor
10	Ferro Aluminum	☒ Ferrous ☐ Non-Ferrous	Product certified by vendor
		☐ 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.

All Pacific Steel scrap yards are indoors, under cover, to minimize fugitive dust. Only scrap originating from the United States which does not contain motor vehicle scrap is purchased. Each Request for Quote (RFQ) and Purchase Order (PO) provided to a scrap vendor shall include the following;

"Material types not acceptable: Automotive Body Scrap, By-products, cans, cylinders, oil, used oil filters, other lubricants, free organic liquids, cholorinated plastic parts, dirt, engine block components, galvanized, lead components, mercury switches, I-beam, Paint, pipe, plastic, skeleton, tubing, or turnings. Scrap must be lead, mercury and Radiation free."

All 3 plant scrap yards conduct yearly random sampling of all vendors - composition of scrap is verified using Optical Emission Spectrometer and carbon analyzer testing equipment. In addition, all heats are analyzed and the composition is verified. If a descrepant heat analytical result is discovered, additional verification of the scrap used for that heat is conducted. All scrap deliveries to PSC must be visually inspected to make sure that each delivery does NOT contain any of the materials listed above.

If any of the above materials are noted in the delivery, the load is rejected and returned to the suppliers. Any rejected scrap shipments not immediately returned to the supplier, shall be sequestered or visibly marked until the shipment is returned to the vendor.

All scrap yard employees are trained concerning proper metal management handling procedures. Training is conducted yearly.

C. Management Practices to Reduce Fugitive Emissions– Metal Management

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

All scrap is stored indoors under cover. At the end of each shift the scrap rooms are first swept with a magnetic sweeper to pick up any metal fines, followed by regular sweeping to contain any dust.

402.3 Furnace Operations

B. Description of Operations - FURNACE OPERATIONS

Section #	Furnace Name and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Type of Operation	Source abated	Type of Abatement Device	District A#	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	187 - Electromelt - Electric Arc Furnace ARC FURNACE QT	187 S-1 40 CFR 63.10895(b) 40 CFR 63.10686	☒ Melting ☐ Heat Treating	☒ Yes ☐ No	Baghouse, Pulse Jet	A-9	Particulate Matter abatement	☒ Yes ☐ No	Grain loading less than 0.0017 grains per dry cubic foot. Pressure drop across the baghouse 2<P<12. Semi annual opacity testing
2	187 - 2 Berkley Steel Heat Treat - HEAT TREATING FURNACES Gas fired heat treat oven	187 S-18 Exempt	☐ Melting ☒ Heat Treating	☐ Yes ☒ No		NA		☐ Yes ☐ No	
3	703 - Electromelt - ELECTRIC ARC FURNACE CQT 7' 1097	703 S-27 40 CFR 63.10895(b) 40 CFR 63.10686	☒ Melting ☐ Heat Treating	☒ Yes ☐ No	Baghouse, Shaking	A-3	Particulate Matter abatement	☒ Yes ☐ No	Pressure drop across the baghouse 1<P<9 Semi annual opacity testing
4	1603 - Whiting EAF Rocker Style ELECTRIC ARC FURNACE 8'-0 R.H. Rocker Tilt	1603 S-1 40 CFR 63.10895(b) 40 CFR 63.10686	☒ Melting ☐ Heat Treating	☒ Yes ☐ No	Baghouse, Pulse Jet	A-1	Particulate Matter abatement	☒ Yes ☐ No	Grain loading less than 0.0033 grains per dry cubic foot. Pressure drop across the baghouse 2<P<12. Semi annual opacity testing
5	1603 - 2 Units - Johnston Gas fired recirculating box type Tempering ovens	Exempt	☐ Melting ☒ Heat Treating	☐ Yes ☒ No	NA	NA		☐ Yes ☐ No	
6	1603 - 5 Units - Johnston Gas fired box type Quench heat treat ovens	Exempt	☐ Melting ☒ Heat Treating	☐ Yes ☒ No	NA	NA		☐ Yes ☐ No	
7	1603 - Johnston 1524 Gas fired Car bottom normalizing heat treat oven	Exempt	☐ Melting ☒ Heat Treating	☐ Yes ☒ No	NA	NA		☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ 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	187 - A-9 BHA/GE 36,000 cfm	Visual inspection of duct exhaust checking for PM. Verify leak detector supply air and opacity readings, check alarms	Daily
2	A-9 Continued	Visual inspection of ductwork system for leaks. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts	Monthly
3	A-9 Continued	Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse, replace bags as necessary	SemiAnnual
4	703 - A-3 Industrial Clean Air 4-3200AE	Visual inspection of duct exhaust checking for PM.	Daily
5	A-3 Continued	Visual inspection of ductwork system for leaks. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts	Monthly
6	A-3 Continued	Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse, replace bags as necessary	SemiAnnual
7	1603 - A-1 Bahnson Hawley/2-294-14-10	Visual inspection of duct exhaust checking for PM. Verify leak detector supply air and opacity readings, check alarms	Daily
8	A-1 Continued	Visual inspection of ductwork system for leaks. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts	Monthly
9	A-1 Continued	Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse, replace bags as necessary	Semi-annual
10	A-9, A-3, A-1	Drain gear box oil and refill, test run	Yearly

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	Baghouse dust bags secured to baghouse outlet	Eliminate fugitive dust. Baghouse dust is transferred from baghouse to dust bag in a closed system	On going
2	Sweeping around baghouse dust collectors	Removal of potential Particulater Matter	Daily

402.4 Forging Operations

B. Description of Operations - FORGING OPERATIONS

Section #	Equipment Name and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Description of Use	Name of Lubricants and/or Oils	Other Materials Used	Source abated	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
	NA					☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ 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 - 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 AND COOLING OPERATIONS									
Section #	Name of Pouring and Cooling Operations and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Cooling Time of Product or Source	Designated Locations of Cooling Operation	Source Abated	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	Casting Pour off area Plant 187	187 S2	A-line 1 hr. minimum B-line 3-24 hrs.	A-line cooling deck, B-line main floor	☒ Yes ☐ No	Baghouse into Carbon Adsorption	Particulate matter and odors	☒ Yes ☐ No	Pressure drop across Carbon units 1<P<9, Temp <110 F
2	Cast mold cooling room Plant 703	703 S30	45 min.	Cooling room	☒ Yes ☐ No	Baghouse into Carbon Adsorption	Particulate matter and odors	☒ Yes ☐ No	Pressure drop across Baghouse 1<P<9 Carbon units 1<P<9, Temp <110 F
3	Cooling Room Plant 1603	1603 S19	23 - 131 hrs. dependant on Sleeve Diameter	Cooling Room	☒ Yes ☐ No	Baghouse into Carbon Adsorption	Particulate matter and odors	☒ Yes ☐ No	A3 and A7 - Pressure drop across baghouses - 4.5<P<7; Visual inspection A8 - FID continuous monitoring At 50 ppm in a 90 minute average): Have full load carbon (52,000 lbs.) on standby within 3 business days. At 65 ppm in a 90 minute average change carbon no later than 7 calendar days. At 85 ppm in a 90 minute average - Cease shakeout operations immediately and pouring operations within 2 hours. Maintain Inlet Face velocity into cooling room, minimum 200 ft/min.
					☐ Yes ☐ No			☐ 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.

During the design phase of a new part at Pacific Steel Casting, the cooling rate/minimum cooling time is determined. Minimum cooling times are unique to each part. The cooling time is dependent on the mold type, mold size and sleeve size. The cooling time is recorded on all job/part cards. Quality assurance requires all minimum cooling times are achieved. Adequate cooling time is required to avoid hardening, cracking, internal damage or an undesired microstructure in the finished part.

Plant 187 - A Line molding is a batch process. The time each heat/batch is poured is recorded. At all times, the operators verify that each mold has cooled for a minimum of one hour before transfering the mold into the shakeout. During continuous pouring, the time of each heat is recorded, however, the minimum cooling time is achieved due to process constraints. Each batch of molds is poured from a small ladle, filled from the larger furnace ladle. The pouring deck space is limited by the small ladle travel availablity. Molds are lined up in the pouring deck area. As a mold is poured it is moved forward on to the cooling deck. To make space for the just poured mold, the molds already on the cooling deck are shuttled forward one position towards the shakeout. The cooling deck has space for multiple molds. As each batch is poured the molds are moved forward one position, on the cooling deck. During continuous pouring, the process of shuttling forward molds, one position for each heat, takes a minimum of one hour before the mold reaches the shakeout unit. Plant 187 - B line Molds are tagged with the pouring date and time and the time after which shakeout can proceed. Employees verify the tags in order to insure the minimum cooling time has transpired, prior to shaking out the parts.

Plant 703 - The molds are loaded on a continuous conveyor line which circulates around from 1) the mold loading station, 2) to the pouring station, 3) into the cooling room (multiple switch backs are located inside the cooling room which insure the minimum cooling times are achieved), 4) to the automatic shakout unit and 5) back to the mold loading station. If the conveyor is continuously run, the parts are in the cooling room for 45 minutes. During normal operations the conveyor is stopped and started, as each heat is poured, increasing the time molds are in the cooling room.

Plant 1603 - Floor molds are tagged on the flask with the pouring date and time and the time after which shakout can proceed. Tags are verified by employees prior to shakout. Line molds have the heat number written on the side of the molds, as they are poured. The melting reports are used to establish the pouring date and time from which the shakout time is verified.

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
1	187 A8 Baghouse, Pulse Jet Torit Cartridge	1.Check manometer across baghouse. 2.Visual inspection internal & external, check cartridge filter integrity and condition. 3.Replace cartridge filters based on inspection and/or changing manometer readings.	1.Weekly 2.SemiAnnual 3. As required - based on visual inspection findings and/or manometer data
2	187 A7 Carbon Adsorption Melrose/Blamer Eng. 60,000 cfm	Replace carbon and prefilters based on daily pressure readings across the carbon beds, prefilters and the bi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
3	703 A2 Baghouse Shaking Industrial Clean Air/10-700 SN	1.Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse, replace bags as necessary. Wire brush fan blades.	1. Weekly 2. Semi-Annual
4	703 A7 Carbon Adsorption Melrose	Replace carbon and prefilters based on daily pressure readings across the carbon beds, prefilters and the bi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
5	1603 A3 Baghouse, Pulse Jet Bahnson Hwaley/HE-378-10	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace bags based on inspection and/or changing manometer readings .	1. Quarterly 2. Semi-Annual 3. As required, based on inspection
6	1603 A7 Baghouse, Pulse Jet Bahnson Hwaley/HE-378-10	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace bags based on inspection and/or changing manometer readings	1. Quarterly 2. Semi-Annual 3. As required, based on inspection
7	1603 A8 Carbon Adsorption	Replace carbon and prefilters based on FID, steel output, pressure drops across	Permit required - FID >65ppm (PSC policy

	Melrose	carbon bed & prefilters checked daily	when FID outlet >20 ppm and/or >700 tons of steel prosessed)

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	Configure door openings & room enclosures to enhance odor capture Plant #187 Pouring room, all 2nd street doors 1-C, & 1-J closed at all times, south doors open on calm days. Plant #703 2-D, 2-J doors closed. Plant #1603 3-A, 3-B, 3-D, 3-E, 3-O doors closed.	Eliminate odors through enhanced capture of casting and cooling fugitive emissions.	Daily
2	Hot molds only stored in designated areas. Plant #187 A line cooling deck or B line floor, Plant #703 inside the cooling room on the conveyor line, Plant #1603 inside the cooling room	Ensure molds are located in areas where odor abatement equipment is located	Continuous

402.6 Shake Out Operations

B. Description of Operations - SHAKE OUT OPERATIONS									
Section #	Name of Shakeout Operations and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Describe Location of Shake Out Operation	Source Abated	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	B Shake Out Simplicity M-11	187 S-3	Floor in the middle of B-line cooling room	☒ Yes ☐ No	A-1, A-7	Baghouse into Carbon Adsorption	Particulate matter and odor abatement	☒ Yes ☐ No	Pressure drop across Baghouse 1<P<9 / Carbon units 1<P<9, Temp <110 F
2	A Shake Out Floatex MF7	187 S-4	East end of A-line deck	☒ Yes ☐ No	A-1, A-7	Baghouse into Carbon Adsorption	Particulate matter and odor abatement	☒ Yes ☐ No	Pressure drop across Baghouse 1<P<9 / Carbon units 1<P<9, Temp <110 F
3	Shakeout & Tray Sanding Simplicity OA-10-N	703 S-31	In clean & finish room just outside the cooling room	☒ Yes ☐ No	A-1, A-7	Baghouse into Carbon Adsorption	Particulate matter and odor abatement	☒ Yes ☐ No	Pressure drop across Baghouse 1<P<9 / Carbon units 1<P<9, Temp <110 F
4	Casting Mold Shake Out Station General Kinematics TMTM-96X12-0	1603 S-4	Molding room just outside the cooling room	☒ Yes ☐ No	A3,A7, A-8	Baghouse into Carbon Adsorption	Particulate matter and odor abatement	☒ Yes ☐ No	Pressure drop across baghouses 4.5<P<7; Visual inspection FID continuous monitoring - At 50 ppm in a 90 minute average): Submit evidence of full load carbon (52,000 lbs.) on standby within 3 business days. Maintain the Inlet face velocity at the openings of the pouring and cooling areas at a minimum 200 fpm .
				☐ 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 - 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
1	187 A1 Baghouse, Pulse Jet Industrial Clean Air	Monitor carbon prefilters. Excessive prefilter pressure can indicate problem with A1 baghouse. Inspection of the interior of baghouse for structural integrity and fabric bag condition, replace bags as necessary	Weekly SemiAnnual
2	187 A7 Carbon Adsorption Melrose	Replace carbon and prefilters based on daily pressure readings across the carbon beds & prefilters and the semi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
3	703 A1 Baghouse, Shaker Industrial Clean Air/7-3200AE	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition. Dye check baghouse, replace bags as necessary. Wire brush fan blades.	1.Weekly 2.Quarterly
4	703 A7 Carbon Adsorption Melrose	Replace carbon and prefilters based on daily pressure readings across the carbon beds & prefilters and the semi-weekly odor tests	As required - based on monitoring data (1<P<9), Odor test >25 odor units
5	1603 A3 Baghouse, Pulse Jet Bahnson Hwaley/HE-378-10	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace bags based on inspection and/or changing manometer readings.	1. Monthly 2. Quarterly 3.As required, based on inspection
6	1603 A7 Baghouse, Pulse Jet	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace bags based on inspection and/or changing manometer readings	1. Monthly 2. Quarterly 3.As required, based on inspection
7	1603 A8 Carbon Adsorption Bahnson Hwaley/HE-378-10	Replace carbon and prefilters based on FID, steel output, pressure drops across carbon bed & prefilters checked daily	Permit required - FID >65ppm (PSC policy when FID outlet >20 ppm and/or >700 tons of steel prosessed)

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
1	Plant 187 B line shakout sand piles are frequently loaded into the shakout unit	Minimize the accumulation of sand emissions	On going
2	Plant 1603 Inlet face velocity monitored	Inlet face velocity maintained at a minimum 200 fpm, to insure adequate draw into the shakeout unit and into the control devices	Weekly

402.7 Finishing Operations

B. Description of Operations - FINISHING OPERATIONS

Section #	Type of Operation	District S# and Applicable NESHAPs Section	Describe Location of Finishing Operation	Number of Machines	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	☒ Grinding ☐ Welding ☐ Other:	187 S12	North end of Plant 1, clean & finish room	GRINDERS: 7 WELDERS: OTHER:	☒ Yes ☐ No	A4	Baghouse, Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Visual inspection of stack emissions
2	☐ Grinding ☒ Welding ☐ Other:	187 S13	East Arc-Air Booth in Plant 1 clean & finish room	GRINDERS: WELDERS: 1 OTHER:	☒ Yes ☐ No	A4	Baghouse, Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Visual inspection of stack emissions
3	☐ Grinding ☒ Welding ☐ Other:	187 S14	West Arc-Air Booth in Plant 1 clean & finish room	GRINDERS: WELDERS: 1 OTHER:	☒ Yes ☐ No	A6	Baghouse, Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Visual inspection of stack emissions
4	☐ Grinding ☐ Welding ☒ Other: Table Blast	187 S15	South wall in Plant 1 clean & finish room next to furnace	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A3	Baghouse, Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Visual inspection of stack emissions
5	☐ Grinding ☐ Welding ☒ Other: RotoBlast	187 S16, S17	East wall and NW corner in Plant 1 clean & finish room	GRINDERS: WELDERS: OTHER: 2	☒ Yes ☐ No	A2	Baghouse, Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Visual inspection of stack emissions
6	☐ Grinding ☐ Welding ☒ Other: Rotoblast	703 S32	North-West end of Clean & Finish room	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A2 A7	Baghouse Shaker Carbon Adsorption	Particulate Matter Abatement Odor	☒ Yes ☐ No	Daily - Pressure drop across baghouse, Pressure Carbon Unit 1<P<9), Odor test >25 odor units
7	☐ Grinding ☐ Welding	703 S33, S34, S35, S36	West end of Clean and Finish lines	GRINDERS: WELDERS: OTHER: 4	☒ Yes ☐ No	A5	Baghouse Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Pressure drop across baghouse 1<P<9

	☒ Other: Cut Off Saw									
8	☒ Grinding ☐ Welding ☐ Other:	703 S37, S38, S39, S40	East end of Clean & Finish lines	GRINDERS: 4 WELDERS: OTHER:	☒ Yes ☐ No	A5	Baghouse Shaker	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Pressure drop across baghouse 1<P<9

B. Description of Operations - FINISHING OPERATIONS

Section #	Type of Operation	District S# and Applicable NESHAPs Section	Describe Location of Finishing Operation	Number of Machines	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
9	☐ Grinding ☐ Welding ☒ Other: Tumble Blast	1603 S6	Middle of West Wall	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A2 A6	Baghouse Shaking	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Pressure drop across baghouse 1<P<9
10	☐ Grinding ☐ Welding ☒ Other: Table Blast	1603 S5	East Center wall of Clean & Finish room	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A2 A6	Baghouse Shaking	Particulate Matter Abatement	☒ Yes ☐ No	Daily - Pressure drop across baghouse 1<P<9
11	☒ Grinding ☐ Welding ☐ Other:	Exempt	5 Grinding stations middle of clean & finish room Plant 187	GRINDERS: 5 WELDERS: OTHER:	☐ Yes ☒ No	NA			☐ Yes ☐ No	
12	☐ Grinding ☒ Welding ☐ Other:	Exempt	8 Welding stations inside Plant 187 Clean & Finsih room	GRINDERS: WELDERS: 8 OTHER:	☐ Yes ☒ No	NA			☐ Yes ☐ No	

13	☐ Grinding ☐ Welding ☒ Other: Plasma Unit	Exempt	West side of Plant 187 Clean & Finsih room	GRINDERS: WELDERS: OTHER: 1	☐ Yes ☒ No	NA			☐ Yes ☐ No	
14	☒ Grinding ☐ Welding ☐ Other:	Exempt	Grinding stations in Plant 187 Cell	GRINDERS: 2 WELDERS: OTHER:	☐ Yes ☒ No	NA			☐ Yes ☐ No	
15	☐ Grinding ☒ Welding ☐ Other:	Exempt	Welding stations in Plant 187 Cell	GRINDERS: WELDERS: 9 OTHER:	☐ Yes ☒ No	NA			☐ Yes ☐ No	
16	☐ Grinding ☐ Welding ☒ Other: Rotoblast.	Exempt	East end of Plant 187 Cell	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	NA	Baghouse	Particulate Matter	☒ Yes ☐ No	Daily - Visual inspection of stack emissions

B. Description of Operations - FINISHING OPERATIONS

Section #	Type of Operation	District S# and Applicable NESHAPs Section	Describe Location of Finishing Operation	Number of Machines	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
17	☒ Grinding ☐ Welding ☐ Other:	Exempt	South Wall of Tombstone	GRINDERS: 9 WELDERS: OTHER:	☐ Yes ☒ No	NA			☐ Yes ☐ No	
18	☐ Grinding ☐ Welding	Exempt	Middle North Wall of Tombstone	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	NA	Baghouse	Particulate Matter	☒ Yes ☐ No	Daily - Pressure drop across baghouse

	☒ Other: Shot Blast Mach.									
19	☐ Grinding ☒ Welding ☐ Other:	Exempt	Arc-Air Booths NW corner of Plant 1603 Clean & Finish room	GRINDERS: WELDERS: 2 OTHER:	☒ Yes ☐ No	A2, A6	Baghouse, Shaking	Particulate Matter	☒ Yes ☐ No	Daily - Pressure drop across baghouse
20	☒ Grinding ☒ Welding ☐ Other:	Exempt	Combination grinding/welding booths located on South and West end of Plant 1603 C&F room	GRINDERS: 8 WELDERS: 8 OTHER:	☒ Yes ☐ No	A2, A6	Baghouse, Shaking	Particulate Matter	☒ Yes ☐ No	Daily - Pressure drop across baghouse
21	☐ Grinding ☒ Welding ☐ Other:	Exempt	Welding booths located SE corner of Plant 1603 C&F room	GRINDERS: WELDERS: 4 OTHER:	☒ Yes ☐ No	A2, A6	Baghouse, Shaking	Particulate Matter	☒ Yes ☐ No	Daily - Pressure drop across baghouse
	☐ Grinding ☐ Welding ☐ Other:			GRINDERS: WELDERS: OTHER:	☐ Yes ☐ No				☐ Yes ☐ No	
	☐ Grinding ☐ Welding ☐ Other:			GRINDERS: WELDERS: OTHER:	☐ Yes ☐ No				☐ Yes ☐ No	
	☐ Grinding ☐ Welding ☐ Other:			GRINDERS: WELDERS: OTHER:	☐ Yes ☐ No				☐ 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	187 A2 Baghouse Shaker Industrial Clean Air/6-700	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition.	Quarterly Semi Annual
2	187 A3 Baghouse Shaker Industrial Clean Air/10,000 cfm	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition	Quarterly Semi Annual
3	187 A4 Baghouse Shaker Industrial Clean Air/30,000 cfm	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition	Quarterly Semi Annual
4	187 A6 Baghouse Shaker Industrial Clean Air/8,000 cfm	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition	Quarterly Semi Annual
5	703 A2 Industrial Clean Air/10-700SN	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition /dye check baghouse, replace bags as necessary. Wire brush fan blades.	Quarterly Semi Annual
6	703 A7 Melrose	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition /dye check baghouse, replace bags as necessary. Wire brush fan blades.	Quarterly Semi Annual
7	703 A5 Industrial Clean Air/M-7-800SW	1. Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag	Quarterly Semi Annual

		condition /dye check baghouse, replace bags as necessary. Wire brush fan blades.	
8	1603 A2 Pitter Metal Pulse Jet	1. Inspect & lube fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition / dye check baghouse, replace bags as necessary.	Quarterly Semi Annual
9	1603 A6 Pitter Metal Pulse Jet	1. Inspect & lube fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition / dye check baghouse, replace bags as necessary.	Quarterly Semi Annual

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	Run magnetic sweeper followed by Auto Sweeper	Pick up and remove particulate matter from operational area	Twice per shift
2	Visually check exhaust stacks for particulates and dust.	Insure proper functioning of the baghouse, and identify presence of torn bags or bags that have fallen off.	Daily

402.7 Sand Reclamation

B. Description of Operations - SAND RECLAMATION

Section #	Name of Sand Reclamation Equipment and Manufacturer/Model #	District S# and Applicable NESHAPs Section	Describe Type of Sand Reclamation Equipment	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	2 Screens - Vibrating & Rotating Jeffery/Rotex	187 S6, S7	Sand Cooler, 6 screen w/mold release virbrating unit & Rotating sand screen	☒ Yes ☐ No	A1 A7	Baghouse Pulse Jet / Carbon Adsorption	Particulate Matter Odors	☒ Yes ☐ No	Daily visual check for particulates and dust. Carbon units Pressure 1<P<9, Temp <110 F
2	Thermal Recovery Lump Breaker Dependable	703 S45	Lump reducer	☒ Yes ☐ No	A10	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
3	TR Flow Bin - Rejected matl.	703 S46	Magnetic Separator, sand hopper & bucket elevator	☒ Yes ☐ No	A10	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
4	TR Sand Cooler/Air Bed Dependable/VTO JDR	703 S47	Sand Cooler, cooling tower & bucket elevator	☒ Yes ☐ No	A10	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
5	TR Material Handling Equip. Dependable	703 S48	3 hoppers, 3 bucket elevators	☒ Yes ☐ No	A10	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
6	Thermal Recycling Unit Dependable 2 TPH HTCC	703 S49	2 ton per hour gas fired thermal sand reclaimer	☒ Yes ☐ No	A10	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
7	Sand Cooler Classirier Omco Fin Type	1603 S9	Fin type sand cooling system	☒ Yes ☐ No	A4	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
8	2 Sand Conditioning Units B & P Pneu-claim	1603 S10, S11	Pneumatic sand reclaimers	☒ Yes ☐ No	A4	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
9	2 Sand storage silos	1603 S12, S13	Return sand bin, Reclaimed sand bin	☒ Yes ☐ No	A4	Baghouse Pulse Jet	Particulate Matter	☐ Yes ☒ No	Daily visual check for particulates and dust.
				☐ 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
1	187 A1 Baghouse Shaking Industrial Clean Air 30,000cf	Monitor carbon prefilters. Increased prefilter pressure indicates A1 baghouse inefficiencies, troubleshoot if necessary. Visual inspection internal (bag condition (holes), linkage wear, excessive build-up, inner shell for holes) & external (outer shell for holes, leaks and seal condition). Replace or repair items based on inspection findings.	Daily Semi Annual
2	187 A7 Carbon Adsorption Melrose	Replace carbon and prefilters as necessary based on odor test & pressure drops across carbon bed & prefilters checked daily	As required - based on monitoring data (1<P<9), Odor test >25 odor units
3	703 A10 Pulse Jet Baghouse Sly/STJ-1511-10	Check pulse jet pressure. Check baghouse and filter cartridge integrity. Replace cartridge filters as necessary.	Weekly Semi Annual
4	1603 A4 Baghouse Pulse Jet Bahnson Hawley HE-210-10	Inspect & lube fan bearings, inspect & check sheaves & V belts. Visual inspection internal (bag condition (holes), linkage wear, excessive build-up, inner shell for holes) & external (outer shell for holes, leaks and seal condition). Replace or repair items based on inspection findings.	Quarterly Semi Annual

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
1	Plant 187 sand reclaim unit is on the roof of the building. Regular roof inspections are conducted. Roof sweeping is conducted if any sand is observed on the roof.	Remove particulate matter	Weekly

402.9 Dross and Slag Management

B. Description of Operations - DROSS AND SLAG MANAGEMENT									
Section #	Material	Describe Location for Cooling of Material	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters	Material Disposition
1	Dross	Do not generate dross - associated with non ferrous metals	☐ Yes ☐ No				☐ Yes ☐ No		☐ Offsite Recycling ☐ Offsite Disposal ☐ Onsite Reprocessing
2	Slag	Plant 187 Between EAF and B line pouring Plant 703 Melting room North end Plant 1603 Pouring room South end	☒ Yes ☐ No	A8, A7 A1, A7 A3, A7, A8	Baghouse into Carbon unit	Particulate matter and odor abatement	☒ Yes ☐ No	187 & 703 - Carbon units Pressure 1<P<9, 703 - Temp <110 F 1603 - Permit required - FID >65ppm (PSC policy when FID outlet >20 ppm and/or >700 tons of steel prosessed)	☒ 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
1	187 A8 Baghouse, Pulse Jet ToritCartridge	1.Check manometer across baghouse. 2.Visual inspection internal (condition of filter railings and integrity/condition of cartridge filter) & external (frame integrity, diaphragm seal). 3.Replace cartridge filters, based on inspection and/or changing manometer readings .	1.Weekly 2.SemiAnnual 3.As required, based on inspection
2	187 A7 Carbon Adsorption Melrose	Replace carbon and prefilters as necessary based on odor test & pressure drops across carbon bed & prefilters checked daily	As required - based on monitoring data (1<P<9), Odor test >25 odor units
3	703 A2 Baghouse Shaking Industrial Clean Air/10-700 SN	1.Inspect & lube shaker & fan bearings, inspect & check sheaves & V belts. 2. Inspection of the interior of baghouse for structural integrity and fabric bag condition/dye check baghouse, replace bags as necessary. Wire brush fan blades.	1.Weekly 2.Quarterly
4	703 A7 Carbon Adsorption Melrose	Replace carbon and prefilters as necessary based on odor test & pressure drops across carbon bed & prefilters checked daily	As required - based on monitoring data (1<P<9), Odor test >25 odor units
5	1603 A3 Baghouse, Pulse Jet Bahnson Hwaley/HE-378-10	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace cartridge filters based on inspection and/or changing manometer readings	1. Monthly 2. Quarterly 3.As required, based on inspection
6	1603 A7 Baghouse, Pulse Jet Bahnson Hwaley/HE-378-10	1.Check manometer across baghouse. 2.Inspection of the interior of baghouse for structural integrity and fabric bag condition. 3.Replace cartridge filters based on inspection and/or changing manometer readings	1. Monthly 2. Quarterly 3.As required, based on inspection

7	1603 A7 Carbon Adsorption Melrose	Replace carbon and prefilters as necessary based on FID, pressure drops across carbon bed & prefilters checked daily	Permit required - FID >65ppm (PSC policy when FID outlet >20 ppm and/or >700 tons of steel processed)

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	Monitor bin loading to avoid overloading	Eliminate spills	On going
2	Sweep area after loading trucks for offsite disposition	Remove particulate matter	Every load pick up
3	Configure door openings & room enclosures to enhance odor capture Plant #187 Pouring room, all 2nd street doors 1-C, & 1-J closed at all times, south doors open on calm days. Plant #703 2-D, 2-J doors closed. Plant #1603 3-A, 3-B, 3-D, 3-E, 3-O doors closed.	Eliminate odors through enhanced capture of slag emissions	Daily

B. Description of Abatement and Control Equipment

Provide a comprehensive list of all abatement and control equipment for operations subject to 12-13-402 and identify the source(s) of operation in which it abates. If the abatement equipment abates multiple sources, provide a detailed description of how the abatement is designated to those sources.

Section #	Name of Abatement Equipment	District A#	Names of Source(s) Abated	District S#	Description of Abatement
1	187 A1 Baghouse	A1	A line Shakeout, B line Shakeout, Sand Muller, Sand reclaim system	S3, S4, S5, S6, S7, S8	Pulse Jet
2	187 A2 Baghouse	A2	Two Rotoblast units located in Clean & Finish room	S16, S17	Shaker
3	187 A3 Baghouse	A3	Table Blast	S15	Shaker
4	187 A4 Baghouse	A4	Cleaning & Grinding Dept., Arc-Air Booth	S12, S13	Shaker
5	187 A6 Baghouse	A6	Arc-Air Booth	NA	Shaker
6	187 A7 Adsorption, Activated carbon	A7	Pouring Area (S2) A line (S4) & B line (S3) shakeouts Sand reclaim (sand cooler,sand screen) (S6, S7) Sand Mixer (S5, S8)	S2, S3, S4, S5, S6, S7, S8	A8 Pulse Jet-S2. A1 Pulse Jet-S3,S4,S5,S6,S7,S8. CA-1, CA-2a and CA-2b Carbon bed-A1 Baghouse and A8 Baghouse.
7	187 A8 Baghouse	A8	Pour off area, main floor	S2	Pulse Jet
8	187 A9 Baghouse	A9	Electric Arc Furnace	S1	Shaker
9	187 A10 Baghouse	A10	Core Sand Muller	S10	Pulse Jet
10	187 E25 Baghouse	Exempt	Plant 1 Cell Rotoblast	NA	Shaker
11	703 A1 Baghouse	A1	EAF Ladle Station w/ canopy hood, Shell Mold Pour Station,Shakeout	S28, S29, S31	Shaker

Section #	Name of Abatement Equipment	District A#	Names of Source(s) Abated	District S#	Description of Abatement
12	703 A2 Baghouse	A2	Cast Mold Cooling Room, Rotoblast	S29, S31	Shaker
13	703 A3 Baghouse	A3	EAF Electirc Arc Furnace	S27	Shaker
14	703 A4 Baghouse	A4	Sand Heater, Sand Coating, Coated sand pug mill, Coated sand vibrating screen, Bucket elevator	S6, S7, S8, S9, S10	Shaker
15	703 A5 Baghouse	A5	Sand silos #1, #2 & loading elevator, Bucket elevator, 4 abrasive cut-off saws, 4 grinders	S1, S2, S3, S4, S33-S40	Shaker
16	703 A10 Baghouse	A10	Sand silo, Lump breaker, flow bin, Sand cooler, Material handling equipment, Thermal recycling unit	S44,S45 S46,S47 S48,S49	Pulse Jet
17	703 T127 Baghouse	Exempt	Shot blast machine	NA	Pulse Jet
18	703 A7 Adsorption, Activated Carbon	A7	EAF Ladle Station w/ canopy hood (S28) Shell Mold Pour Station (S29) Shakeout (S31) Cooling Room (S30) Rotoblast (S32) 2 Shell twin molding machines (S22, S23)	S22,S23 S28,S29 S30,S31 S32	A1 Shaker-S28, S29,S31. A2 Shaker-S30,S32. CA-1 carbon bed-A2 Baghouse. CA-2 & CA-3 Carbon bed-S22,S23 and A1 Baghouse.
19	1603 A1 Baghouse	A1	Electric Arc Furnace	S1	Pulse Jet
20	1603 A2Baghouse	A2	Blast table, Rotoblast, Arc-air booths, Welding booths	S5, S6	Shaker
21	1603 A3Baghouse	A3	Mold Shakout, Sand Mixer utiltizing Techniset binders, Mold coating, Pouring/cooling	S4, S14 S18,S19	Pulse Jet
22	1604 A4 Baghouse	A4	Sand silo #1, Sand cooler, Sand conditioning units #1 & #2, Return sand bin #1 & #2, Sand elevators #1, #2, & #3.	S7, S9, S10,S11 S12,S13 S15,S16 S17	Pulse Jet

Section #	Name of Abatement Equipment	District A#	Names of Source(s) Abated	District S#	Description of Abatement
23	1604 A5 Baghouse	A5	Sand Mixer utilizing Techiset Binders	S14	Dry Filter
24	1603 A6 Baghouse	A6	Blast table, Tumble blast, Arc-air booths, Welding booths	S5, S6	Shaker
25	1603 A7 Baghouse	A7	Mold Shakeout, Sand Mixer utiltizing Techniset binders, Mold coating, Pouring/cooling	S4, S14 S18,S19	Pulse Jet
26	1603 A8 Adsorption, Activated Carbon	A8	Mold Shakeout (S4) Sand Mixer utiltizing Techniset binders (S14) Mold coating (S18) Pouring/cooling (S19)	S4, S14 S18,S19	A3 and A7 Pulse Jet-S4,S14,S18 and S19. CA-1, CA-2 and CA-3 Carbon bed-A3 Baghouse and A7 Baghouse.

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

AppendixB - Confidential

B. Facility Layout / Floor Plan

AppendixC - Confidentials.

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 PREVIOUSLY REALIZED						
Section #	Identify Type of Operation per Section 12-13-402	Description of Equipment, Processes or Procedures Previously Realized	Implementation Date	Purpose of Implementation	Employee Training Conducted	Description of Employee Training and Frequency of Training
1	Mold & core making, metal management, Furnace operations, casting & cooling, shakeout, finishing, Sand reclaim, Slag	Odor Management Plan approved by BAAQMD	10/03/2008	Reduce odors and particulate matter.	☒ Yes ☐ No	All employees trained after initial roll out. Yearly refresher training is conducted. Plan elements are also incorporated into PSC operating procedures. Job specific training is included during PSC operating procedure training, when conducted.
2	Mold & core making, casting & cooling, shakeout, Sand reclaim	Plant 1603 change to lower VOC binder;	2008	Reduce VOC emissions	☒ Yes ☐ No	Initial training to make employees aware of the sand recipe change.
3	Furnace operations	Plant 1603 EAF Room fume collection collection installed;	2008	Increase capture efficiency of odors and particulate matter	☒ Yes ☐ No	Maintenance trained on equipment PM
4	Mold & core making, casting & cooling, shakeout, Sand reclaim	Plant 703 precoated sand changed to lower VOC product	2009	Reduce VOC emissions	☒ Yes ☐ No	Employees trained on new MSDS after change.
5	Casting & cooling, shakeout	Plant 187 Main Floor fume collection directed to baghouse and carbon unit	2010	Increase capture efficiency of odors and particulate matter	☒ Yes ☐ No	Maintenance trained on equipment PM
6	Mold & core making	Plant 187 Core Room baghouse installed.	2010	Abate core room particulate matter.	☒ Yes ☐ No	Maintenance trained on equipment PM
					☐ Yes ☐ No	
					☐ Yes ☐ No	
					☐ Yes ☐ No	

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 IMPLEMENTATION OF THE EMP ELEMENTS (on or before May 1, 2014)					
Section #	Identify Type of Operation per Section 12-13-402	List Specific Elements to be Implemented on or before May 1, 2014	Implementation Date	Description of Elements to be Implemented	Purpose of Implementation
	NA				

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	Mold and Core Making - 703	Consider installation of ventilation hoods over S-19 and S-26	To Be Determined	Working with Engineering and District Staff to determine equipment capabilities and permit requirements for implementation/installation of hoods over S-19 and S-26	Further reduce fugitive emissions of PM and odors
2	Casting and Cooling - 187	Consider installing wall to isolate pouring operations in Plant 1	To be Determined	Working with Engineering and District Staff to determine feasibility and permit requirements for implementation/installation of wall	Further reduce fugitive emissions of PM and odors
3	Mold ShakeoutSand Mixer utiltizing Techniset binders Mold coating Pouring/cooling - 1803	Consider increasing carbon system capacity which affects: Mold Shakeout (S4) Sand Mixer (S14) Mold coating (S18) Pouring/cooling (S19)	To be Determined	Working with Engineering and District Staff to determine equipment capabilities and permit requirements for implementation	Improve abatement capacity
4	Sand Reclamation - 703	Consider connecting Sand Reclamation Unit (S-49) to Carbon Unit	To be Determined	Working with Engineering and District Staff to determine equipment capabilities and permit requirements for implementation	Further reduce fugitive emissions of PM and odors

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:

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 #	Date of APCO Recommendation	(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) Implementation Verified by APCO
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ Yes ☐ No

A. APCO Recommendations to EMP and Determination of Approvability (12-13-405) Date of EMP:

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 #	Date of APCO Recommendation	(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) Implementation Verified by APCO
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ Yes ☐ No
			☐ Yes ☐ No				☐ 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.

Appendix #	Reference to Page # and Section # of EMP
A	Page #9 , Section # 403.1.3 A
B	Page #75 , Section # 403.1.A
C	Page #76 , Section # 403.1.B
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Appendix # A

Reference to Page #9**, Section #** Confidential

Attachment 2

Retrofit any batch or drum

AQUA Black® Solutions

WMA from MAXAM

- No Smoke
- No Odor
- No Fumes
- No Chemicals
- No Problem!

The Simple, Reliable, Cost-efficient WMA System from the Asphalt Experts

AQUABlack Solutions
WMA from MAXAM

Benefits:

- No smoke - no odor
- Quick & easy installation
- Retrofit ANY plant
- Easy to operate
- Lower fuel costs
- Reduce labor costs
- Improve worker safety
- Reduce emissions
- Run more RAP

Purchase for Less

The AQUABlack® System costs significantly less than most of the WMA systems currently available. In some cases, half the price. It is designed with simplicity and reliability in mind by the world's foremost experts in asphalt plant retrofit applications – MAXAM.

Quick and Easy Installation

The flexible system retrofits onto any plant and can be installed over a weekend. The unit comes completely assembled. Simply attach it to your A/C line, hook it up to a water source, install the control panel, and you're ready to go.

After installation, we offer a Field Technician to your site for two days of start up and training. Training takes only about an hour since operation is so simple. Once it's set up, you simply turn it on or off as needed.


Hot Mix Asphalt


Warm Mix Asphalt

Run More RAP

Lower temperatures means you can run more RAP and stay within the temperature limits of your baghouse.

Save Time

In field tests, AQUABlack® warm mix asphalt consistently reaches targeted compaction rates with fewer roller passes. It also enables paving in cooler weather, extends the paving season, and permits faster release of the pavement to traffic. As the air bubbles created in the foaming process are completely removed during the rolling and compaction process, superior in-place densities are achieved with less rolling effort. In some cases, 25% less.

Reduce Fuel Consumption

Lower temperatures means lower fuel consumption. Often as much as 15%. It also means the exhaust fan doesn't have to work as hard, saving energy spent on moving air.

Reduce Emissions

Lower fuel consumption translates directly into lower emission of greenhouse gases at the plant from drying and heating of the aggregate. The fumes and smoke at the plant load-out, and at the laydown site, are also eliminated.

Simplify Maintenance

Some WMA systems use 10 or more solenoids to control critical components. We thought simpler was better. We thought you'd rather be running your plant than running to get replacement parts.

Extend Equipment Life

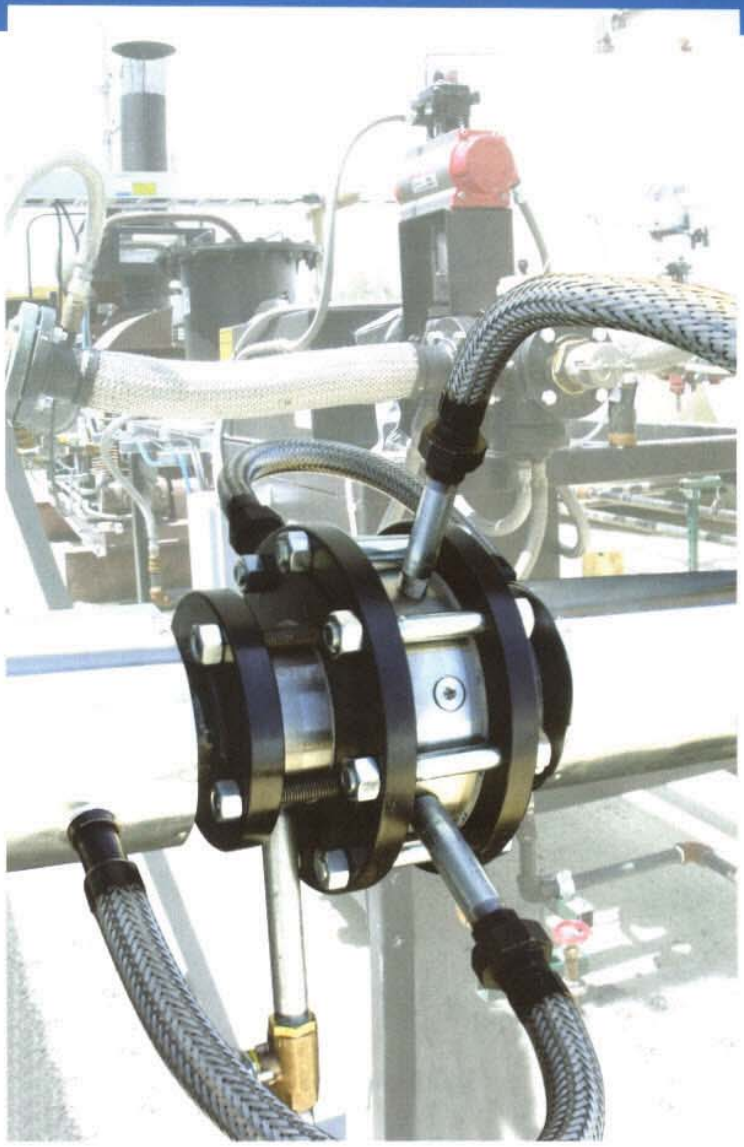
Lower temperatures reduces the wear and tear on equipment; extends maintenance intervals and reduces overall maintenance costs.

Components:

PLC Based Touch Screen Control Panel
The touch-screen Control Panel is mounted in the control house and easily connected to the metering system using multi-conductor cable. When the operator sets max tons on the control panel, the system automatically calculates the correct amount of water to be injected into the WMA, and sets the water pump drive to the proper output rate. A mass flow meter monitors flow rate and sounds a warning if it goes out of the optimum range.

High-pressure Variable Speed Metering System
The high-pressure variable speed metering system comes completely pre-piped and prewired, and is enclosed in a weather tight enclosure. The enclosure is heated for cold weather operation. The system is equipped with an automatic compressed air purge that cleans water out of the delivery line upon shutdown to prevent freezing.

AQUABlack® Foaming Gun
The AQUABlack® all stainless Foaming Gun comes with all required water hose and hot oil jumpers for installation. It is inserted into the existing a/c line just prior to entering the drum. Access nozzle service ports means that no disassembly is required for inspection of your system.



AQUABlack® Solutions features:

- High volume foaming with MicroBubble™ technology. Any system can produce foam, but it's the microbubbles that stay in the mix throughout the mixing, hauling and paving process.
- Automatic PLC based touch screen control
- Enclosed and heated for all weather operation
- Stainless construction to eliminate corrosion. The stainless steel mixing diffuser provides even distribution of the water throughout the liquid asphalt.
- Built for 1,000 psi operating pressure
- No moving parts in the meter. This meter will not plug or fail from scale or particulate in the water.
- The high-pressure system enables low water-to-liquid-asphalt ratio during foaming and creates the microbubbles which stay in the mix until compaction.

Will you go back and forth between hot and warm mix asphalt?

If so, you need to take precautions to protect your baghouse. Here's why: The lower exhaust temperature from WMA can cause condensation in the baghouse, creating acid rain that will damage your equipment, and mud-cake the bags - saddling you with high replacement costs and unnecessary down-time. You need an effective way to control the stack temperature to protect your baghouse. The answer is the patented MAXAMizer® Heat Recovery System. It automatically maintains proper stack temperature +/-5°, and typically saves 5-to-10% in fuel consumption.

Being More Competitive in a Go Green Business Climate

Go Green or Go Home

More and more jobs are being specified with a WMA option. If you can't offer WMA, you may not qualify to even bid on a lot of jobs in the future. You don't have to be on the outside looking in. The AQUABlack® WMA System easily retrofits onto any manufacturer's asphalt plant, and it can be installed on yours in just two days.

Going Green is Good Business

The AQUABlack® WMA System opens doors by allowing you to bid on jobs specified as WMA only. It makes your company more neighborhood friendly by reducing fumes and pollutants. It makes you a more responsible/credible member of the business community; and it helps you attract and retain good employees. If you had your choice of working on a HMA crew or a WMA crew, which would you choose?

Protect Workers and Your Business

While the adverse affects of breathing asphalt fumes are negligible, OSHA, NIOSH and the EPA continue to conduct studies to gauge its affect on health. NIOSH says additional studies are needed to better characterize occupational exposures to asphalt fumes, vapors and aerosols. Why wait? Move to WMA now with the easy-to-implement system – AQUABlack®.

AQUABlack® Solutions
WMA from MAXAM

MAXAM Equipment, Inc.
1575 Universal Avenue • Kansas City, MO 64120 **800•858•6070**

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

June 11, 2014

Seth L. Watkins,
Plant Manager
Berkeley Asphalt Company
699 Virginia Street
Berkeley, CA 94710

Dear Mr. Watkins:

Enclosed are the results of the source tests that this District conducted on your *Rotary Dryer (S-1) abated by Cyclone & Baghouse (A-4 & A-7)* on *April 15 & 16, 2014*.

These data are considered to be representative of the emissions from this source for the operating parameters described during the test times and are forwarded as a courtesy for your information.

Your cooperation with our test personnel is appreciated. Please contact Charles McClure, Supervising Air Quality Engineer, if you have any questions regarding these data.

Sincerely,

Robert Bartley
Air Quality Engineering Manager

RB:CM:ge

Enclosure

Distribution:
Firm
Permit Services
Requester

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

939 Ellis Street
San Francisco, California 94109
(415) 771-6000

SUMMARY OF SOURCE TEST RESULTS

Report No. 14181
Test Date: 04/15&16/14

Test Times:
Run A : 1055 – 1157 60 min
Run B : 0800 – 0903 60 min
Run C : 0935 – 1038 60 min

Source Information		BAAQMD Representatives
Firm Name and Address: Berkeley Asphalt Company 699 Virginia Street Berkeley, CA 94710	Firm Representative and Title: Seth L. Watkins Plant Manager Phone No. (510) 526-1611	Source Test Team: B. Kino/M. Hernandez M. Wiley/J. Aaseth
Permit Condition: ID # 16017	Source: Rotary Dryer (S-1) abated by Cyclone & Baghouse (A-4 & A-7) Site No. A0123 Permit No. 06630 Operates 7 hrs/day & 240 days/year Batch	Permit Services/Enforcement Division: D. Singh Test Requested by: B. Bartley, (CDS) S. Applin, (C&E)

Operating Parameters: Test Run A was conducted on 4/15/14, and test Runs B & C were conducted on 4/16/14. The plant was producing an average of 130 tons/hr of asphalt for both test days. The rotary dryer is natural gas fired with an average gas usage of 25.74 MMBtu/hr (4/15/14) and 40.17 MMBtu/hr (4/16/14.)

Applicable Regulations: 2-1-307 | VN Recommended: **NO**

Source Test Results and Comments:

METHOD	PARAMETER	RUN A	RUN B	RUN C	AVERAGE	LIMIT
ST-17	Volume Flow Rate, SDCFM	28,000	27,400	26,000	27,100	
	Stack Temperature, °F	190	193	194	192	
ST-23	Water Content, volume %	19.5	19.9	20.6	20.0	
ST-14	Oxygen, dry volume %	16.4	16.0	15.9	16.1	
ST-5	Carbon Dioxide, dry volume %	2.3	2.5	2.6	2.4	
	Carbon Dioxide, lbs/hr	4,340	4,651	4,582	4,524	
ST-6	Carbon Monoxide, dry ppmv	60	55	44	53	
	Carbon Monoxide, Corrected to 15 % O_2, dry ppmv	89	70	55	71	230
	Carbon Monoxide, lbs/hr	7.3	6.5	5.0	6.3	
ST-7	(TOC) Total Organic Carbon (includes methane), ppmv as C_1	10	11	13	11	300
	TOC, lbs/hr as Carbon	0.5	0.6	0.6	0.6	
	Methane, ppmv	10	11	13	11	
	(NMOC) Non-methane Organic Carbon, ppmv as C1	< 3.0	< 3.0	< 3.0	< 3.0	
	NMOC, lbs/hr	< 0.2	< 0.2	< 0.1	< 0.2	
	NMOC, lbs/ton of asphalt	< 0.001	< 0.001	< 0.001	< 0.001	0.03
ST-13A	Nitrogen Oxides, dry ppmv	22	22	24	23	
	Nitrogen Oxides, Corrected to 15 % O_2, dry ppmv	30	28	28	29	30
	Nitrogen Oxides, lbs/hr	4.4	4.4	4.4	4.4	
ST-19A	Sulfur Dioxide, dry ppmv	31	< 10	15	< 16	
	Sulfur Dioxide, lbs/hr	8.8	< 2.7	3.9	< 5.1	
	Sulfur Dioxide, lbs/ton of asphalt produced	0.068	< 0.021	0.030	< 0.040	0.094
EPA-5	Front Half (FH) Particulate, gr/SDCF	< 0.002	< 0.002	< 0.002	< 0.002	0.01
	FH Particulate, lb/hr	< 0.60	< 0.60	< 0.60	< 0.60	40.0
	Back Half (BH) Particulate, gr/SDCF*	0.013	0.005	0.012	0.010	
	BH Particulate, lbs/hr*	3.2	1.1	2.7	2.3	
	Isokinetic Ratio, act/theo	103%	104%	101%		

Note: A "<" indicates values that are less than the method detection limit.
* Back half particulate refers to particulate that condenses in the impingers, or back half of the sample train. Back half particulate quantified by use of wet impingement methodology.

NO COMMERCIAL USE OF THESE RESULTS IS AUTHORIZED

Air Quality Engineer / Date	Supervising Air Quality Engineer / Date	Approved by Air Quality Engineering Manager / Date
B. Kino 6/10/14 **B. Kino**	C. McClure II 6/10/14 **C. McClure II**	Robert Bartley 6/10/14 **B. Bartley**

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Culminating months of process analysis and discussions between Berkeley City Staff, Councilmember Linda Maio, and Lehigh Hanson (Berkeley Asphalt), the company has agreed to process additional improvements that will further reduce emissions and odors at the company's Berkeley asphalt plant.

The Company has agreed to install new equipment, upgrade their process, and engage in staff training, all of which will significantly change their asphalt.

"It should provide improve the situation for nearby residents, be better environmentally, and better for the actual construction workers who are laying down the asphalt," said Councilmember Maio.

"We appreciate Councilmember Maio's diplomacy and tenacity. This solution is a win-win for all involved," said Mike Roth, Vice President for Lehigh Hanson – Region West.

The new equipment and training will result in an enhanced production process known as "Warm Mix Asphalt," an emerging technology that has been increasingly endorsed by federal and state officials. Typical asphalt is prepared at temperatures reaching 330 degrees Fahrenheit. The new process will use temperatures of 260 to 280 degrees Fahrenheit.

"We believe that the new technology (WMA) will meet or exceed 30-50% reduction in odor emissions. We think we can convert half of our customers to WMA immediately. It will take some time to educate and convert the remaining customers from conventional hot mix asphalt (HMA) to WMA. For our part, we will immediately begin educating our customers to accelerate that acceptance. We are confident that we can achieve the same success that others have with WMA," Roth said.

The new technology should reduce emissions and odors significantly and result in a more environmentally sustainable operation. The company has committed to installing all of the equipment and completing all of its employee training by the end of the year.

"With this state-of-the-art approach to production, other companies have reduced their emissions and odors by as much as 50 percent," said Roth. "We hope to experience similar success."

This agreement is the latest result of pressure from Councilmember Maio on the City and the company to address odors. Residents experiencing odors have been contacting Maio's office and documenting problems. This led to numerous conversations between City staff and neighbors and Lehigh Hanson. City Staff has been diligent in meeting met with Lehigh Hanson on several occasions to discuss ways technological and operational improvements to address complaints about noise, odor and dust. This resulted in the company implementing a series of mitigations, including the following:

Noise:
· Installed silencer on exhaust stack: May 2013
(*Reduces sound emitting from exhaust fan)*

· Installed Variable Frequency Drives on exhaust fan motors: September 2013
(Enables operator to turn fan down when not in production mode which reduces sound emitting from exhaust fan)

· Vulcanized conveyor belts: September 2013
(Removed metal clips on conveyor belts to eliminate clicking sound)

· Replaced sound blankets: October 2013
(Reduces sound emitting from various equipment on the plant)

Odor:
· Added deodorant to incoming oil loads: September 2012 to current
(Reduces odor in oil loads being delivered to plant)

· Replaced four condensers on oil tanks: July 2013
(Reduces *odor emitting for oil storage tanks)*

· Tuned burner: September 2013
(Improves efficiency of natural gas burner used to heat aggregate)

· Installed four charcoal filters on oil tanks: September 2013
(Eliminates odor emitting from oil storage tanks)

· Hired professional odor consultant: September 2013
(Working to improve best practices at the plant)

Dust:
· Installed sprinkler on waste pile: July 2013
(Eliminates dust while loading trucks with asphalt waste)

· Installed fence fabric: August 2013
(Reduces dust being blown onto the site from unpaved Second Street)

This new, proposed enhancement to use state-of-the art equipment and manufacturing processes is a great improvement and demonstrates the City's and the Company's ability to work together to contribute to for a cleaner and more sustainable city.