BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Synthetic Minor Operating Permit Revision
ENGINEERING EVALUATION REPORT
APPLICATION 14029

Pacific Steel Casting
Plant 22605
1333 2nd Street
Berkeley, CA 94710

June 2016

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Executive Summary

Pacific Steel Casting operates a steel foundry in the City of Berkeley, California. Pacific Steel Casting has three physically separate buildings designated Plants # 1, # 2, and # 3 by the facility. Each plant differs in the size of castings it produces as well as the materials and process it uses to make casting molds.

As PSC predates Regulation 2, Rule 6 (adopted November 3, 1993) – the regulation implementing Title V of the federal Clean Air Act as amended in 1990 – each plant was originally permitted as a separate facility and given unique District facility numbers: 187 (Plant # 1), 703 (Plant # 2), and 1603 (Plant # 3).

In 2002, Pacific Steel Casting obtained a Synthetic Minor Operating Permit (SMOP) that covered operations at Plants # 2 and # 3. At the time, the two plants were considered "contiguous" per Regulation 2, Rule 6 (Major Facility Review) whereas Plant # 1 was not.

In 2005, the District reviewed the facility's operations and determined that Plant # 1 was considered "adjacent" to Plant # 2 and # 3. At this time, the District treated all three plants as one facility but maintained the separate District site numbers to aid the District's Compliance and Enforcement Division responding to air quality complaints.

As a result of the District's determination, Pacific Steel Casting was required to submit a permit application to revise their existing SMOP to include Plant # 1 sources.

Through 2008 to 2013, the District and Pacific Steel Casting conducted extensive ambient air quality monitoring, source stack testing, and a comprehensive review of emissions estimation methodologies, assumptions, and emission factors on an individual source basis.

In 2014, PSC filed for bankruptcy and then was acquired by a new owner. As is customary with all transfers of ownership, the District assigned a new site number (District Facility 22605). At this time, the District re-numbered PSC's sources to aid the District's Compliance and Enforcement Division.

In 2015, the District became aware that Pacific Steel Casting's pouring, cooling, and shake operations could potentially be large sources of carbon monoxide emissions, which were previously unknown. The District and Pacific Steel Casting discussed how to account for these emissions, and ultimately agreed to accept a conservative emission factor to be source tested in the future.

This SMOP revision incorporates Plant # 1 sources as well imposes substantial new requirements and limits on an individual source basis to ensure that emissions remain and can be demonstrated to remain below the SMOP facility-wide emission limits.

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Background

Pacific Steel Casting (PSC) has submitted this application to revise the existing Synthetic Minor Operating Permit (SMOP) for its steel foundry ("facility") located in Berkeley, California.

PSC is a steel-casting foundry that operates three physically separate buildings or "Plants" (Plants # 1, # 2, and # 3) located in the City of Berkeley, California.

Plant # 1: 1328 2nd Street, Berkeley, CA 94710
Plant # 2 1420 2nd Street, Berkeley, CA 94710
Plant # 3: 1421 2nd Street, Berkeley, CA 94710

The three plants each produce different sized castings (metal products) from recycled scrap steel and other metals employing different molds, cores (mold inserts to form shape of metal casting), and binders (bonding agent used as an additive to mold or core sand to maintain shape).

Plant 1 began operations in the 1930's, produces castings from 1 to 1500 pounds, and uses the green sand mold process (comprising sand, bentonite clay, water, and corn starch).

Plant 2 began operations in 1975, produces castings from 1 ounce to 60 pounds, and uses phenolic shell binders for molds and cores. Plant 2 uses the Shell process for the molding system and the sand molding process uses a binder mixed with sand and is baked to form molds and cores for the castings.

Plant 3 began operations in 1981, produces large castings up to 7000 pounds, and uses phenolic no-bake binders for molds and cores. Plant 3 primarily uses a phenolic urethane binder mixed with the sand.

The facility's three plants follow a similar (but not identical) process:

(1) creating a mold, which consist of sand bound together in a specific shape (the sand is mixed with binder material for this purpose),
(2) melting the metal in an electric arc furnace,
(3) pouring the molten metal into transfer ladles and then into the cavity of the mold, and waiting for the metal to cool and harden,
(4) separating the cast component from the mold and cores by "shakeout" of the sand mold, and
(5) various finishing steps that include grinding and heat treating of the steel parts.

As PSC predates Regulation 2, Rule 6 (adopted November 3, 1993) – the regulation implementing Title V of the federal Clean Air Act as amended in 1990 – each plant was originally permitted as a separate facility and given unique District facility numbers: 187 (Plant # 1), 703 (Plant # 2), and 1603 (Plant # 3).

In 2002 (District Application 2399), the District issued a SMOP (codified in Permit Condition 20207) to comply with Title V permitting requirements for Plants # 2 and # 3 because the two plants were considered by the District to be contiguous properties (located across the street from each other). At the time, Plant # 1 was not considered contiguous because a separate business entity (Berkeley Forge) was located between Plant # 1 and Plant # 2.

In 2005, the District reviewed the three plants operations and determined that Plant # 1 is "adjacent" and functionally interrelated with Plant # 2 and Plant # 3 and that all three plants should be treated as one facility, subject to the requirements of District Regulation 2, Rule 6, which implements the Federal Title V operating permit program. The District determined that PSC had to apply to modify the SMOP to include Plant # 1, in accordance with District Regulation 2-6-422. For the detailed analysis, see the September 9, 2005 letter from Brian Bateman, Director of Engineering, to Joe Emmerichs, Vice President and General Manager of PSC,

attached to this Engineering Evaluation. At this time, the District treated all three plants as one facility but maintained the separate District site numbers to aid the District's Compliance & Enforcement division responding to air quality complaints.

Through 2008 to 2013, the District and Pacific Steel Casting conducted extensive ambient air quality monitoring, source stack testing, and a comprehensive review of emissions estimation methodologies, assumptions, and emission factors on an individual source basis.

In 2014, PSC filed for bankruptcy and then was acquired by a new owner. As is customary with all transfers of ownership, the District assigned a new site number (District Facility 22605). At this time, the District re-numbered PSC's sources to aid the District's Compliance and Enforcement Division.

In 2015, the District became aware that PSCs pouring, cooling, and shake operations could potentially be large sources of carbon monoxide emissions, which were previously unknown. The District and PSC discussed how to account for these emissions, and ultimately agreed to accept a conservative emission factor to be source tested in the future.

Existing SMOP Condition 20207 limited precursor organic compound (POC) emissions from Plants 2 and 3 to 90 tons per year. For the SMOP revision, PSC requested to keep the same POC limit as well as impose conditions to ensure facility's emissions do not exceed 90 tons for any of the criteria pollutants. The facility will be required to accept conditions limiting hazardous air pollutant (HAP) emissions to less than 9 tons per year for a single HAP and less than 23 tons per year for all HAPs combined.

Sources Covered by Synthetic Minor Operating Permit

The following tables list the sources and abatement devices at each Pacific Steel Casting plant that are covered by the Synthetic Minor Operating Permit. The tables also identify if the source emits oxides of nitrogen (NO_X), POC, particulate matter with aerodynamic diameters less than 10 microns (PM_{10}), carbon monoxide (CO), and sulfur dioxide (SO_2).

Table 1A - Plant 1 Sources

Source	Description	Pollutant Emitted?				
		NO_X	**POC**	**PM_{10}**	**CO**	**SO_2**
1001	Arc Furnace	Y	Y	Y	Y	Y
1002	Pour-Off Area	Y		Y	Y	
1003	B Shake Out (Dust Collection)		Y	Y		
1004	A Shake Out (Dust Collection)		Y	Y		
1005	Sand System (Dust Collection)		Y	Y		
1006	Sand Cooler 6 Screen		Y	Y		
1007	Sand Screen			Y		
1008	Muller			Y		
1010	Muller, Core Sand			Y		
1011	Muller			Y		
1012	Cleaning & Grinding Dept.			Y		
1013	Arc-Air Booth			Y		
1014	Arc-Air Booth			Y		
1015	Pangborn Table Blast			Y		
1016	Roto-Blast			Y		
1017	Roto-Blast			Y		
1018	Heat Treating Furnaces [exempt]	Y	Y	Y	Y	
1019	Raw Sand Receiving			Y		
1022	Core Bake Ovens [exempt]	Y	Y	Y	Y	Y

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
1027	Core-Making Operation		Y			
32001	Minor Combustion Sources (small ladle heater) [exempt]	Y	Y	Y	Y	Y

Table 1B - Plant 1 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	POC	PM_{10}	CO	SO_2
1001	Baghouse # 1			Y		
1002	Baghouse # 2			Y		
1003	Baghouse # 3			Y		
1004	Baghouse # 4			Y		
1006	Baghouse # 5a			Y		
1007	Carbon Adsorption System		Y			
1008	Baghouse, Cartridge			Y		
1009	Baghouse			Y		
1010	Baghouse Core Sand # 9			Y		

Table 2A – Plant 2 Sources

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
2001	Sand Silo Loading Elevator			Y		
2002	Sand Silo #1			Y		
2003	Sand Silo #2			Y		
2004	Bucket Elevator			Y		
2005	Resin Tank (Hai 789he)			Y		
2006	Sand Heater	Y	Y	Y	Y	Y
2007	Sand Coating		Y	Y	Y	Y
2008	Coated Sand Pug Mill		Y	Y	Y	Y
2009	Coated Sand Vibrating Screen		Y	Y	Y	Y
2010	Bucket Elevator		Y	Y	Y	Y
2011	Cooling Tower, Coated Sand		Y	Y	Y	Y
2012	Bucket Elevator		Y	Y	Y	Y
2013	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2014	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2015	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2016	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2017	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2018	Core Molding Machine [exempt]	Y	Y	Y	Y	Y
2019	Coated Sand Bin			Y		
2020	Shell Molding Machine, Single [exempt]	Y	Y	Y	Y	Y
2021	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2022	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2023	Shell Molding Machine, Twin [exempt]	Y	Y	Y	Y	Y
2024	Shell Molding Machine, Single [exempt]	Y	Y	Y	Y	Y
2025	Abrasive Blaster, Core Area [exempt]			Y		
2026	Large Ladle Heater	Y	Y	Y	Y	Y
2027	Electric Arc Furnace	Y	Y	Y	Y	Y
2028	EAF ladle station w/canopy hood		Y	Y		
2029	Shell Mold Pouring Station		Y	Y		
2030	Cast Mold Cooling Room		Y	Y	Y	
2031	Shakeout & Tray Sanding		Y	Y		

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
2032	Rotoblast			Y		
2033	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2034	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2035	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2036	Abrasive Cut-Off Saw / Grinding [exempt]			Y		
2037	Grinder [exempt]			Y		
2038	Grinder [exempt]			Y		
2039	Grinder [exempt]			Y		
2044	Grinder [exempt]			Y		
2044	Sand Storage Silo	Y	Y	Y	Y	Y
2045	Lump Breaker	Y	Y	Y	Y	Y
2046	Flow Bin (rejected material)	Y	Y	Y	Y	Y
2047	Sand Cooler/Air Bed #1 (c-1)	Y	Y	Y	Y	Y
2048	Material Handling Equipment (3 hoppers, 3 bucket elevs …)	Y	Y	Y	Y	Y
2049	Thermal Recycling Unit (sand reclamation)	Y	Y	Y	Y	Y
32000	Miscellaneous Minor Sources [exempt]	Y	Y	Y	Y	Y

Table 2B - Plant 2 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	POC	PM_{10}	CO	SO_2
2001	Baghouse # 1			Y		
2002	Baghouse # 2			Y		
2003	Baghouse # 3			Y		
2004	Baghouse # 4			Y		
2005	Baghouse # 5			Y		
2006	Bag Filter			Y		
2007	Carbon Adsorption System		Y			
2010	Pulse Jet Bag House Dust Collector			Y		

Table 3A – Plant 3 Sources

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
3001	Electric Arc Furnace	Y	Y	Y	Y	Y
3002	Ladle Heater [exempt]	Y	Y	Y	Y	Y
3004	Casting mold shake out		Y	Y	Y	
3005	Blast table			Y		
3006	Tumble blast			Y		
3007	New Sand Silo #1			Y		
3009	Sand cooler classifier			Y		
3010	Sand conditioning unit #1			Y		
3011	Sand conditioning unit #2			Y		
3012	Return sand bin #1			Y		
3013	Reclaimed sand bin #2			Y		
3014	Mold mixing area		Y	Y		
3015	New sand receiving bucket elevator #1			Y		
3016	Bucket elevator #2 returned sand			Y		
3017	Bucket elevator #3 reclaimed sand			Y		
3018	Coating operation		Y	Y		
3019	Casting mold shake out station			Y		
3020	Holcote 578 CCD Coating [exempt]			Y		

Source	Description	Pollutant Emitted?				
		NO_X	POC	PM_{10}	CO	SO_2
Exempt	Heat treat furnaces	Y	Y	Y	Y	Y
Exempt	Cleaning and Grinding in Finishing Room			Y		
Exempt	Arc Air Booth/Welding in Finishing Room			Y		

Table 3B – Plant 3 Abatement Devices

Abatement Device	Description	Pollutant Abated?				
		NO_X	POC	PM_{10}	CO	SO_2
3001	EAF Baghouse			Y		
3002	Cleaning Room Baghouse # 1			Y		
3003	Shake Out Baghouse # 1			Y		
3004	Sand System Baghouse			Y		
3005	Mixer Sand Bin Dust Filter			Y		
3006	Cleaning Room Baghouse # 2			Y		
3007	Shakeout Baghouse # 2			Y		
3008	Carbon Adsorption System		Y			

Emissions

PSC sources emit criteria pollutants (NO_X, VOC, PM_{10}, CO, SO_2, lead) as well as HAPs and toxic air contaminants (TACs).

As emissions from some PSC sources are captured by collection ducts and abated by abatement devices, pollutants may be emitted out of emission stacks (if captured) or as fugitives (if not captured).

Therefore, a source's total emissions may be calculated using the following equations:

Captured Emissions = Throughput x Emission Factor x (Capture Efficiency) x (1 – Control Efficiency) [Eqn 1]

Fugitive Emissions = Throughput x Emission Factor x (1 – Capture Efficiency) [Eqn 2]

Total Emissions = Captured Emissions + Fugitive Emissions [Eqn 3]

Throughput is the amount of material processed by a source. Emission factor is the amount (pounds) of emissions per unit (e.g. tons of steel, gallon of coating, etc.) of throughput. Capture efficiency is the amount of emissions that is collected and vented to an abatement device. Control efficiency is the abatement efficiency of the abatement device.

After an extensive review of District records, source test reports, monitoring data, and other assumptions, the District estimated emissions from individual sources using proposed maximum throughputs and emission factors for each source as well as minimum required capture and abatement efficiencies for each abatement device.

To obtain a SMOP pursuant to Section 2-6-423.2.1, a facility must have permit conditions limiting the facility's potential to emit to no greater than 95 tons per year of any regulated air pollutant, 9 tons per year of any single HAP, and 23 tons per year of any combination of HAPs.

Criteria Pollutants

Potential to Emit

Using District records of the maximum design capacities of individual PSC sources as well as requested maximum annual throughputs, the District estimated PSC's facility-wide potential to emit, shown in Table 4.

Table 4 – Potential to Emit Emissions

Plant	Potential to Emit (tons/year)				
	NO_X	**POC**	**PM_{10}**	**CO**	**SO_2**
Plant # 1	6.65	11.71	74.74	122.58	10.75
Plant # 2	8.05	305.78	92.52	144.30	116.80
Plant # 3	3.66	18.03	52.61	103.36	9.20
Facility (All Plants)	**18.36**	**335.52**	**219.88**	**370.24**	**136.76**

As shown in Table 4, facility-wide emissions of POC, PM_{10}, CO, and SO_2 exceed the major source thresholds. Therefore, a SMOP is required.

Proposed Emissions

To be eligible for a SMOP, PSC agreed to lower throughputs for all individual sources located at all three plants.

With the lowered proposed maximum throughputs, proposed emissions were estimated by the District (see Table 5).

Table 5 – Proposed Emissions

Plant	Proposed Emissions (tons/year)				
	NO_X	**VOC**	**PM_{Total}**	**CO**	**SO_2**
Plant # 1	4.28	4.29	23.43	30.11	2.45
Plant # 2	31.16	36.99	16.62	31.16	14.87
Plant # 3	1.71	5.48	16.85	27.96	2.44
Facility (All Plants)	**10.04**	**46.76**	**56.90**	**89.24**	**19.77**

As Table 5 indicates, emissions of all criteria pollutant remain below 90 tons with new proposed maximum annual throughputs.

Hazardous Air Pollutants (HAPs)

The table below shows the complete list of HAPs evaluated in the Health Risk Assessment for PSC and the annual emissions of each compound and total combined HAP emissions.

The District's estimates show that at the maximum or permit limit levels, no individual HAP is emitted in amounts greater than 9 tons per year and the combined HAP emissions are less than 23 tons per year. Note that copper and isopropanol are not HAPs. These materials were included in the Health Risk Assessment because these materials are listed as toxic air contaminants by the State of California. Both the District's estimates and the HAP emissions data contained in the HRA indicate that monitoring for HAPs either individually or combined, does not appear warranted. However, the District has included a permit condition that requires PSC to calculate the emissions of HAPs individually and combined, by using District-approved emission estimation calculation methods.

Table 6 – HAP Emissions

Pollutant	Emissions	
	(lbs/year)	(tons/year)
2-Methylnaphthalene	3.51E+01	0.02
Acenaphthene	2.33E-01	0.00
Acenaphthylene	2.58E+00	0.00
Acetaldehyde	1.28E+02	0.06
Anthracene	2.82E+00	0.00
Arsenic	8.55E-01	0.00

Pollutant	Emissions	
	(lbs/year)	(tons/year)
Benz(a)anthracene	1.08E-01	0.00
Benzene	4.82E+02	0.24
Benzo(a)pyrene	8.72E-02	0.00
Benzo(b)fluoranthene	9.63E-02	0.00
Benzo(e)pyrene	3.40E-02	0.00
Benzo(g,h,i)perylene	2.46E-02	0.00
Benzo(k)fluoranthene	2.08E-02	0.00
Beryllium	1.57E-02	0.00
Cadmium	4.80E+00	0.00
Chromium (VI)	3.09E-01	0.00
Chromium, Total	7.84E+01	0.04
Chrysene	1.22E-01	0.00
Copper	6.08E+01	0.03
Cresol, m,p-	3.84E+01	0.02
Cresol, o-	1.24E+02	0.06
Dibenzo(a,h)anthracene	6.22E-03	0.00
Ethyl benzene	2.79E+00	0.00
Fluoranthene	4.65E-01	0.00
Fluorene	4.39E+00	0.00
Formaldehyde	1.29E+03	0.65
Indeno(1,2,3-cd)pyrene	2.38E-02	0.00
Isopropanol	2.14E+03	1.07
Lead	7.96E+01	0.04
Manganese	6.61E+02	0.33
MDI	6.74E+00	0.00
Mercury	1.45E+00	0.00
Naphthalene	7.61E+02	0.38
Nickel	5.80E+01	0.03
Perylene	2.06E-02	0.00
Phenanthrene	3.59E+00	0.00
Phenol	2.89E+03	1.45
Pyrene	2.45E-01	0.00
Selenium	5.64E+00	0.00
Toluene	6.35E+01	0.03
Total PCDD/PCDF (TEF wt-equiv.)	3.11E-07	0.00
Xylene, m,p-	2.93E+01	0.01
Xylene, o-	1.31E+01	0.01
Xylene, Total	4.23E+01	0.02
Zinc	2.06E+03	1.03
VOC	8.88E+03	4.44
Total TACs		**8.88**

Health Risk Assessment

The District required Pacific Steel Casting to prepare a Health Risk Assessment (HRA) to meet the requirements of the Air Toxics Hot Spots Program (Health and Safety Code Sections 44300 through 44394, AB2588 – Air Toxics "Hot Spots" Information and Assessment Act of 1987), which established a formal regulatory program for site-specific air toxics emissions inventory and health risk quantification that is managed by California air districts.

On November 5, 2008, the District approved the final HRA report and made it available for public review. The Office of Environmental Health Hazard Assessment (OEHHA) has also approved the final HRA report. Following approval of the HRA, the District updated and finalized the criteria pollutant emissions inventory for PSC. Both the HRA and the criteria pollutant emissions inventory required extensive source testing starting in 2005 by both the District and PSC in order to develop more accurate, updated emissions estimates for both hazardous air pollutants (HAPs) and criteria pollutants for all three plants. PSC submitted a revised criteria pollutant emissions inventory for District review.

Results from the HRA indicate that the estimated maximum cancer risk is 31 in a million, the chronic hazard index is 1.8 and the acute hazard index is 0.85. The monthly averaged ambient air concentrations of lead are below levels that would impact blood lead levels in children. With an estimated maximum cancer risk that is greater than 10 in a million, PSC must provide public notification at least annually to the exposed public about its operations.

Synthetic Minor Operating Permit Limits

To obtain a District Synthetic Minor Operating Permit (SMOP) pursuant to Regulation 2-6-423.2.1, a facility must have permit conditions limiting the facility's potential to emit to no greater than 95 tons per year of any regulated air pollutant, 9 tons per year of any single hazardous air pollutant, and 23 tons per year of any combination of hazardous air pollutants.

The facility has proposed and will accept permit conditions that limit the overall POC, CO, SO_2, and PM_{10} emissions not to exceed 90 tons per year. The facility will also accept permit conditions that limit the throughput of all sources and require the facility to use the emission factors listed in Appendix A (detailed emission calculations) to calculate facility emissions, in order to assure compliance with the 90 tons per year limit. Emission factors have been established through source testing at the facility.

The facility emissions have a number of contributing variables. These variables include, but are not limited to:

- Steel production,
- Sand and binder usage,
- Size of cast products,
- Capture efficiency of abatement devices,
- Control efficiency of abatement devices,
- And organic content of materials.

As discussed in the Emissions section and shown in Equations 1, 2, and 3; maximum estimated emissions depend on a variety of inputs. Due to the complexity of the facility and to assure that facility-wide emissions do not exceed the SMOP limits, permit conditions will be imposed on an individual source basis.

The following sections address the specific conditions that will be imposed to assure each key emissions estimation assumption (e.g. emissions, maximum throughput, emission factors, abatement requirement, capture efficiencies, abatement efficiencies) remains valid.

Emissions
Emissions will be limited on both a facility-wide and individual source basis. To demonstrate compliance with these limits, the facility will be required to calculate on quarterly basis and using District-approved methodologies, emissions on an individual source, plant, and facility basis and total emissions for the previous 12 consecutive months.

Throughput
Throughputs will be limited on an individual source basis. To demonstrate compliance, the facility will be required to maintain records of daily production and report monthly throughputs on a quarterly basis.

Emission Factors
The emission factors used to estimate emissions will become enforceable limits. The facility will estimate individual source emissions using these emission factors and actual production throughput.

The basis for each emission factor is detailed in the detailed emission calculations of Appendix A.

Abatement
Within the three plants, PSC has multiple hoods stationed through the plants that collect emissions from pouring, cooling, and shakeout operations as well as dedicated hoods that collect emissions from the electric arc furnaces (EAFs).

Collected emissions are routed to either baghouses to control PM_{10} emissions and/or to carbon adsorption units to control POC emissions.

Conditions will be imposed to require that equipment be abated by existing devices and that the facility properly operate and maintain abatement equipment to ensure continued abatement.

Additionally, the District is imposing a requirement to cease operation of emitting sources, when there is an indication that the abatement equipment is malfunctioning, in order to eliminate or prevent inadvertent or excess emissions. One condition will prohibit the operation of POC emitting equipment if it is determined that the carbon has experienced breakthrough (as determined by monitoring of the outlets).

Capture Efficiencies
Because of the nature of the operations, capture efficiencies of the facility's ventilation hoods and ducting cannot be 100 percent except for the EAFs during scrap melting. Therefore, conditions requiring minimum capture efficiencies on an individual source basis will be imposed. Additional requirements will be imposed to increase capture efficiencies. These include requirements for closing exhaust vents, maintaining negative pressure for each plant as well as individual rooms, and mandating where certain operations may occur.

To ascertain if emissions are being collected, the facility will be required to conduct source tests at the inlets of abatement devices.

Control Efficiencies
Abated equipment will have enforceable limits on the minimum control efficiencies. Source tests will be required at the inlets and outlets of abatement devices to determine compliance.

To ensure efficacy of abatement equipment, enforceable limits on the minimum and maximum pressure drop across each baghouse will be imposed and the facility will be required to install detectors and alarms on all baghouses to alert the facility of any broken bags. The facility will be required to monitor total hydrocarbons from each carbon adsorption system and replace the carbon whenever the abatement efficiency decreases below 90 percent.

Monitoring

In addition to abatement device parametric monitoring (e.g. baghouse pressure drop gauges, broken bag detectors, etc.), PSC will be required to install continuous total hydrocarbon analyzers (flame ionization detectors) to measure emissions from each carbon adsorption unit at Plants # 1 and # 2 (similar to current practices at Plant # 3) as well conduct a series of source tests.

The continuous total hydrocarbon analyzers will be required to be installed at Plants # 1 or # 2 once production or a contract for production exceeds 50 percent of the maximum allowable production.

PSC will be required to conduct the source tests listed in Table 7.

Table 7 – Source Test Matrix

Pollutant	Plant(s)	Source(s)	Deadline	Frequency
PM_{10}	1, 2, 3	EAF Baghouses	120 days	Annual
	1, 2, 3	A-1001 A-2001, A-2002 A-3003, A-3007	1 year	Annual
CO	1, 2, 3	EAF Baghouses	120 days	Every two years
	1	S-1002 Pour Off Area S-1003 B Shake Out S-1004 A Shake Out	3 years	Every five years
	2	S-2029 Shell Mold Pouring Station S-2030 Cast Mold Cooling Room S-2031 Shakeout & Tray Sanding		
	3	S-3004 Casting Mold Shake Out Station S-3019 Pouring and Cooling		
Metals*	1, 2, 3	EAF Baghouses	120 days	Every three years
	3	S-3001 EAF	120 days	Initial
	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Filterable PM	1, 2, 3	EAF Baghouses	120 days	Every three years
	3	S-3001 EAF	120 days	Initial
	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
PAHs (as defined in Reg. 2-5)	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Benzene	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial

Pollutant	Plant(s)	Source(s)	Deadline	Frequency
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Formaldehyde	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
Non-Methane Hydrocarbons	3	S-3004 Shakeout	120 days	Initial
	3	S-3019 Pour Area	120 days	Initial
	2	S-2029 Shell Mold Pouring Station	120 days	Initial
	2	S-2031 Shakeout & Tray Sanding	120 days	Initial
	2	S-2030 Cast Mold Cooling Room	120 days	Initial
*arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, nickel, selenium, zinc				

Recordkeeping

To allow District personnel to calculate and verify emission estimates and determine compliance with imposed limits, PSC will be required to maintain and make available records on all throughputs, emission calculations, source tests, monitoring data, maintenance and inspections.

Reporting

On a quarterly basis, PSC will be required to report to the District the monthly throughputs of all sources, total emissions from Plants # 1, # 2, and # 3, and carbon monitoring data.

On an annual basis, PSC will be required to submit an annual compliance report.

In addition to the quarterly and annual reports, PSC will be required to report any non-compliance to the Director of Enforcement within 10 calendar days of discovery.

Statement of Compliance

Regulation 2, Rule 2 (New Source Review)
Regulation 2, Rule 2 applies to new or modified sources. None of PSC sources is considered new or modified with this application. Therefore, Regulation 2, Rule 2 does not apply.

California Environmental Quality Act (CEQA)
The application is exempt from CEQA per District Regulation 2-1-312.1, which states that applications to modify permit conditions for sources that do not involve any increases in emissions or physical modifications are exempt from CEQA. District Regulation 2-1-312.9 exempts projects pursuant to the State CEQA Guidelines, Section 15281 of the State CEQA Guidelines exempts Title V permit applications from CEQA.

Prevention of Significant Deteoriation (PSD)
Per Regulation 2-2-304, PSD applies to either a new major facility or to a major modification at a major facility.

Regulation 2, Rule 6 (Major Facility Review)
The facility is in compliance with the necessary requirements in Regulation 2, Rule 6 to obtain a SMOP. PSC has voluntarily accepted enforceable permit conditions including emissions limits that will keep facility annual emissions at or below 90 tons per year of any regulated air pollutant, 9 tons of any hazardous air pollutant, and 23 tons of any combination of hazardous air pollutants.

The facility will continue to comply with Regulation 2-6-310, which requires a facility of this size to accept permit conditions that limit emissions to not exceed 95 tons per year of any regulated air pollutant, 23 tons per year of combined HAPs and 9 tons per year of any single HAP.

Regulation 3
Regulation 3 requires payment of permit fees. Fees have been invoiced and paid by Pacific Steel Casting.

Regulation 12, Rule 13 (Foundry and Forging Operations)
Regulation 12, Rule 13 requires an owner/operator of a foundry to: (1) develop an emissions minimization plan (EMP), (2) obtain approval from the District of an EMP, and (3) operate according to an approved EMP.

Pacific Steel Casting has developed and obtained approval of an EMP and is operating according to the EMP.

National Emissions Standards for Hazardous Air Pollutants (NESHAP)
There following NESHAPs are potentially applicable to Pacific Steel Casting:

- Title 40 CFR Part 63 Subpart A (General Provisions)
- Title 40 CFR Part 63 Subpart EEEEE (NESHAPs for Iron and Steel Foundries)
- Title 40 CFR Part 63 Subpart YYYYY (NESHAPs for Area Sources: Electric Arc Furnace Steelmaking Facilities)
- Title 40 CFR Part 63 Subpart ZZZZZ (NESHAPs for Iron and Steel Foundries Area Sources)

NESHAP EEEEE applies to major sources of HAPs whereas NESHAP ZZZZZ applies to minor (area) sources of HAPs.

Per 40 CFR Part 63 Subpart A (40 CFR 63.2), facilities defined as major sources of HAPs are those that emit, or has the potential to emit considering controls, more than 10 tons per year of any individual HAP or more than 25 tons per year of any combination of HAPs.

As shown in Table 6, the facility's potential to emit HAPs is less than 10 tons per year on an individual basis and less than 25 tons per year on a combination basis. Therefore, the facility is considered a minor source of HAPs and is subject to 40 CFR 63 Subpart ZZZZZ.

NESHAP ZZZZZ classifies facilities as either small or large and has different thresholds for small and large based upon if the facility is considered a new or existing facility.

For new (or reconstructed) facilities, a facility is defined as small if the annual melting capacity is less than 10,000 tons or less.

For existing facilities, a facility is defined as small if it produced less than 20,000 tons for the calendar year 2008.

A facility is considered new if it commenced construction or reconstruction prior to September 17, 2007.

Pacific Steel Casting constructed Plant 1 (1930's), Plant 2 (~1975), and Plant 3 (~1981) prior to September 17, 2007 and although Pacific Steel Casting has made changes at the three plants, none of those changes would exceed the 50 percent fixed capital cost threshold included in the definition of reconstruction in 40 CFR 63.2.

Therefore, Pacific Steel Casting is considered an existing source for purposes of NESHAP ZZZZZ.

According to the District's emissions inventory, Pacific Steel Casting produced more than 20,000 tons of steel in the calendar year 2008. Therefore, the facility is considered a large foundry per NESHAP ZZZZZ.

NESHAP ZZZZZ lists the following requirements for large steel foundries:

- Prepare written materials specifications for a metallic scrap management program,
- Require scrap metal vendors remove mercury switches from vehicle bodies,
- Use binder formulations that do not contain methanol,
- Limit PM emissions from all metal melting furnaces to less than 0.8 pounds per ton of metal charged
- Limit HAP emissions from all metal melting furnaces to less than 0.06 pounds per ton of metal charged,
- Limits visible emissions from all metal melting furnaces to less than 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 30 percent,
- Prepare and operate according to a written operation and maintenance (O&M) plan for each control device used to comply with the PM, metal HAP, or opacity emissions limit.
- Monthly visual inspections of baghouse ductwork for leaks or install a bag leak detection system,
- Inspect baghouse interiors for structural integrity every 6 months or install a bag leak detection system,
- Monthly inspections of equipment important to performance of total capture system (i.e. pressure sensors, damps, and damper switches) and repair found defects as soon as practicable but no longer than 90 days,
- Keep records of all deviations, written materials specifications, binder formulation, monthly melt production, O&M plan, and compliance demonstrations; and
- Submit semiannual reports of any exceedances of emissions limits.

At a minimum, each O&M plan must include the following:

- General facility and contact information;

- Positions responsible for inspecting, maintaining, and repairing emissions control devices which are used to comply with Subpart ZZZZZ;
- Descriptions of items, equipment, and conditions that will be inspected, including an inspection schedule for the items, equipment, and conditions. For baghouses that are equipped with bag leak detection systems, the O&M plan must include the site-specific monitoring plan required by 63.10897(d)(2), and
- Identify and estimated quantity of the replacement parts that will be maintained in inventory.

Currently, the District has not been delegated authority for enforcing compliance with 40 CFR 63 Subpart ZZZZZ. Therefore, EPA is responsible for enforcing compliance with compliance with 40 CFR 63 Subpart ZZZZZ.

Compliance Assurance Monitoring (CAM)

Title 40 CFR Part 64 outlines the requirements for compliance assurance monitoring.

CAM applies to equipment located at a facility considered a major source that meets the following three-part test:

- Subject to an emission limitation or standard, and
- Use a control device to achieve compliance, and
- Have pre-control emissions that exceed or are equivalent to the major source threshold.

As discussed above, the electric arc furnaces are subject to a PM and HAP emissions limitation (40 CFR Part 63 Subpart ZZZZZ) and use baghouses to achieve compliance. The pre-control PM emissions from each individual electric arc furnace (S-1001, S-2027, and S-3001) exceed the major source threshold.

Therefore, a CAM plan would be required if Pacific Steel Casting were a major source. As Pacific Steel Casting has elected to obtain a SMOP, a CAM plan is not required.

Synthetic Minor Operation Permit Conditions

Condition # 20207:

Pacific Steel Casting (PSC) Plants 1, 2, and 3 (collectively District Plant # 22605), have a synthetic minor operating permit (SMOP). This SMOP covers all sources at the facility as of the date of permit issuance.

These conditions establish the permit terms that ensure this plant is classified as a Synthetic Minor Facility under District Regulation 2, Rule 6 - Major Facility Review and ensure it is not subject to the permitting requirements of Title V of the Federal Clean Air Act as amended in 1990 and 40 CFR Part 70. All applications submitted by the applicant and all modifications to the facility's equipment after issuance of this SMOP must be evaluated to ensure that the facility will not exceed the synthetic minor operating permit limits below and that sufficient monitoring, recordkeeping, and reporting requirements are imposed to ensure enforceability of the limits.

Any revision to a condition establishing this facility's status as a Synthetic Minor Facility or any new permit term that would limit emissions of a new or modified source for the purpose of maintaining the facility as a Synthetic Minor must undergo the procedures specified by Rule 2-6, Section 423. The basis for the synthetic minor conditions is an emission limit for each regulated air pollutant of less than 90 tons per year at the facility, an emission limit for a single hazardous air pollutant of less than 9 tons per year at the facility, and an emission limit for a combination of hazardous air pollutants of less than 23 tons per year at the facility.

The District's SMOP contains adequate monitoring to enable the District to verify compliance with the SMOP emissions limits.

The permitted sources (S-#) at Plant 1 on the date of issuance of this synthetic minor permit are:

1001 ARC FURNACE
1002 POUR-OFF AREA
1003 B SHAKE OUT (DUST COLLECTION)
1004 A SHAKE OUT (DUST COLLECTION)
1005 SAND SYSTEM (DUST COLLECTION)W/WHIRL AIR FLOW SYSTEM
1006 SAND COOLER,6 SCREEN,W/MOLD RELEASE COATING OPERATION
1007 SAND SCREEN
1008 MULLER
1010 MULLER, CORE SAND
1011 MULLER
1012 CLEANING & GRINDING DEPT.
1013 ARC-AIR BOOTH
1014 ARC-AIR BOOTH
1015 PANGBORN TABLE BLAST
1016 ROTO-BLAST
1017 ROTOBLAST
1018 HEAT TREATING FURNACES
1019 RAW SAND RECEIVING
1022 CORE BAKE OVENS
1027 Core-Making Operation
32001 MINOR SOURCES

The permitted abatement devices (A-#) at Plant 1 on the date of issuance of this synthetic minor permit are:

1001 BAGHOUSE # 1

1002 BAGHOUSE # 2
1003 BAGHOUSE # 3
1004 BAGHOUSE # 4
1006 BAGHOUSE # 5A
1007 CARBON ADSORPTION SYSTEM
1008 BAGHOUSE, CARTRIDGE
1009 BAGHOUSE
1010 BAGHOUSE CORE SAND # 9

The permitted sources (S-#) at Plant 2 on the date of issuance of this synthetic minor permit are:

2001	SAND SILO LOADING ELEVATOR	
2002	SAND SILO #1	
2003	SAND SILO #2	
2004	BUCKET ELEVATOR	
2005	RESIN TANK (LIQUI-BIN)	
2006	SAND HEATER	
2007	SAND COATING	
2008	COATED SAND PUG MILL	
2009	COATED SAND VIBRATING SCREEN	
2010	BUCKET ELEVATOR	
2011	COOLING TOWER, COATED SAND	
2012	BUCKET ELEVATOR	
2013	CORE MOLDING MACHINE	[EXEMPT]
2014	CORE MOLDING MACHINE	[EXEMPT]
2015	CORE MOLDING MACHINE	[EXEMPT]
2016	CORE MOLDING MACHINE	[EXEMPT]
2017	CORE MOLDING MACHINE	[EXEMPT]
2018	CORE MOLDING MACHINE	[EXEMPT]
2019	COATED SAND BIN	
2020	SHELL MOLDING MACHINE, SINGLE	[EXEMPT]
2021	SHELL MOLDING MACHINE, TWIN	[EXEMPT]
2022	SHELL MOLDING MACHINE, TWIN	[EXEMPT]
2023	SHELL MOLDING MACHINE, TWIN	[EXEMPT]
2024	SHELL MOLDING MACHINE, SINGLE	[EXEMPT]
2025	ABRASIVE BLASTER, CORE AREA	[EXEMPT]
2026	LARGE LADLE HEATER	
2027	ELECTRIC ARC FURNACE	
2028	EAF LADLE STATION W/CANOPY HOOD	
2029	SHELL MOLD POURING STATION	
2030	CAST MOLD COOLING ROOM	
2031	SHAKEOUT & TRAY SANDING	
2032	ROTOBLAST	
2033	ABRASIVE CUT-OFF SAW	[EXEMPT]
2034	ABRASIVE CUT OFF SAW	[EXEMPT]
2035	ABRASIVE CUT-OFF SAW	[EXEMPT]
2036	ABRASIVE CUT-OFF SAW	[EXEMPT]
2037	GRINDER	[EXEMPT]
2038	GRINDER	[EXEMPT]
2039	GRINDER	[EXEMPT]
2040	GRINDER	[EXEMPT]
2044	SAND STORAGE SILO	

2045 LUMP BREAKER
2046 FLOW BIN (REJECTED MATERIAL)
2047 SAND COOLER/AIR BED #1 (C-1)
2048 MATERIAL HANDLING EQUIPMENT (3 HOPPERS,3 BUCKET ELEVS, ONE TRUCK
2049 (R-1), THERMAL RECYCLING UNIT (SAND RECLAMATION)
32000 MISCELLANEOUS MINOR SOURCES [EXEMPT]

The permitted abatement devices (A-#) at Plant 2 on the date of issuance of this synthetic minor permit are:

2001 BAGHOUSE # 1
2002 BAGHOUSE # 2
2003 BAGHOUSE # 3
2004 BAGHOUSE # 4
2005 BAGHOUSE # 5
2006 BAG FILTER
2007 CARBON ADSORPTION SYSTEM
2010 PULSE JET BAG HOUSE DUST COLLECTOR

The permitted sources (S-#) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 ELECTRIC ARC FURNACE
3002 LADLE HEATER [EXEMPT]
3004 CASTING MOLD SHAKE OUT STATION
3005 BLAST TABLE
3006 TUMBLE BLAST
3007 NEW SAND SILO #1
3009 SAND COOLER CLASSIFIER
3010 SAND CONDITIONING UNIT #1
3011 SAND CONDITIONING UNIT #2
3012 RETURN SAND BIN #1
3013 RECLAIMED SAND BIN #2
3014 MIXER SAND BIN
3015 NEW SAND RECEIVING BUCKET ELEVATOR #1
3016 BUCKET ELEVATOR #2 RETURNED SAND
3017 BUCKET ELEVATOR #3 RECLAIMED SAND
3018 MOLD COATING OPERATION
3019 POURING AND COOLING
3020 HOLCOTE 578 CCD COATING

The permitted abatement devices (A-#) at Plant 3 on the date of issuance of this synthetic minor permit are:

3001 EAF BAGHOUSE
3002 CLEANING ROOM BAGHOUSE # 1
3003 SHAKE OUT BAGHOUSE # 1
3004 SAND SYSTEM BAGHOUSE
3005 MIXER SAND BIN DUST FILTER
3006 CLEANING ROOM BAGHOUSE # 2
3007 SHAKEOUT BAGHOUSE # 2
3008 CARBON ADSORPTION SYSTEM & DUCTING

For the purposes of these SMOP conditions, the following terms have the following meanings:

"**facility**" shall mean and comprise Plants 1, 2, and 3;

"**owner/operator**" shall mean the owner or operator of the facility;

"**operations**" shall mean and include material handling, mixing, mold making activities, melting, pouring, cooling, shakeout, grinding, and sand recycling;

"**operational hour**s" shall mean those periods of time during which material handling, mixing, mold making activities, melting, pouring, cooling, or shakeout operations are taking place at a facility plant;

"**cooling operations**" shall mean the period of time commencing with the pouring of casting and concluding with the commencement of shakeout operations at a plant;

"**shakeout operations**" shall mean the period of time commencing with any separation of the casting from the mold and ends with a complete removal of the casting from the shakeout station with all of the sand from the mold contained in the shakeout operation;

"**carbon cycle**" at a plant shall mean the commencement of carbon adsorption system operation with a fresh batch of carbon through the last day of operation with that same batch of carbon.

"**maintain**" shall mean maintain and keep in good repair at all times.

For the purposes of this SMOP, if two or more carbon beds together abate one or more sources, the carbon beds together constitute a "carbon adsorption system." If a single carbon bed abates a specific source or sources exclusively, that carbon bed constitutes a "carbon adsorption system" for the source or sources. The carbon adsorption systems at the facility are A-1007 at Plant 1, A-2007 at Plant 2, and A-3008 at Plant 3. Unless a permit condition refers to a specific carbon adsorption system at one of the plants, a reference to a carbon adsorption system means and applies to all of the carbon adsorption systems.

SMOP EMISSIONS LIMITS/REQUIREMENTS

1. The owner/operator shall not allow the facility to exceed any of the following emissions limits in any consecutive 12-month period:
   a. 90 tons in any consecutive 12-month period of any regulated air pollutant including, but not limited to, precursor organic compounds (POC), carbon monoxide (CO), particulate matter less than 10 microns (PM10), sulfur dioxide (SO2), and oxides of nitrogen (NOx), but not including hazardous air pollutants (HAPs);
   b. 9 tons in any consecutive 12-month period of any single HAP, and
   c. 23 tons in any consecutive 12-month period of any combination of HAPs.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

2. The owner/operator shall not allow the facility to exceed any of the throughputs, emissions factors, and/or emissions specified in these SMOP conditions as well as SMOP Conditions 24466 (Plant 1), 24548 (Plant 2), and 24547 (Plant 3). All data and assumptions contained in this part as well as Conditions 24466, 24547, and 24548 shall be considered enforceable limits.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

3. The owner/operator shall use a District-approved calculation method to demonstrate compliance with the criteria pollutant emission limits contained in both Parts 1a and 2.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

4. The owner/operator shall use a District-approved calculation method to demonstrate compliance with the hazardous air pollutants (HAPs) emissions limits contained in Parts 1a and 1c.
   [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

INTERIM ORGANIC EMISSIONS AND CARBON EFFICIENCY MONITORING AT PLANTS 1 AND 2

5. Within 30 days of the issuance of this SMOP and until installation of flame ionization detectors (FIDs) at each carbon adsorption system (pursuant to Part 6 below), the owner/operator shall operate the carbon adsorption systems at A-1007 at Plant 1 and A-2007 at Plant 2 in a manner to prevent carbon breakthrough as defined in this Part 5.

   a. The owner/operator shall conduct hydrocarbon sampling at both the inlets and outlets of each carbon adsorption system's carbon bed during either pouring or shake-out operations at the sources abated by the carbon adsorption system. The owner/operator shall also conduct analysis of all hydrocarbon samples. The owner/operator shall have such hydrocarbon sampling and analysis conducted by an entity approved in advance by the District. The hydrocarbon sampling and analysis shall be conducted a minimum of once every calendar day.
   b. If carbon breakthrough occurs at one of the carbon adsorption systems, the owner/operator shall cease all mixing, pouring, and/or shakeout operations at the respective plant where carbon breakthrough has occurred, until the carbon is replaced in accordance with Part 5c.
   c. The owner/operator shall replace all carbon at that carbon adsorption system with fresh carbon no later than 24 hours after carbon breakthrough has occurred. If the owner/operator has poured a mold less than 24 hours prior to carbon breakthrough, then the owner/operator shall continue to abate the cooling operation for a minimum of 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.
   d. The owner/operator shall submit a carbon breakthrough report within 10 days of breakthrough to the Director of Engineering, with a copy to the Director of the Compliance and Enforcement. The plant report shall include all of the following information about the carbon cycle in which carbon breakthrough occurred and the sources abated by that plant's carbon adsorption system:

      1. The date, time and location of each daily hydrocarbon sample taken and whether pouring and/or shake out operations occurred during the sampling.
      2. The daily hydrocarbon sampling's analytical results.
      3. The number of days of operation prior to breakthrough.
      4. The daily tonnage of steel throughput.
      5. The number of castings produced each day during the operation period prior to breakthrough.
      6. The total tons of sand used each day during the operation period prior to breakthrough.
      7. The total tons of binder and catalyst materials used each day during the operation period prior to breakthrough.
      8. The date and time of the last pouring operation prior to breakthrough.

   For purposes of this Part 5 only, "carbon breakthrough" shall be defined as not achieving a minimum control efficiency of 88.0 percent by weight as determined by the daily hydrocarbon sampling at each carbon adsorption system at all times the system is in operation. The "carbon cycle" shall be defined as the period from installation of a fresh load of carbon at the carbon adsorption system until carbon breakthrough. [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

CARBON ADSORPTION SYSTEMS (Plants 1, 2, and 3)

The following Parts 6 through 17 require the installation and operation of an organic vapor-analyzer-flame ionization detector (FID) system for each carbon adsorption system in Plants 1, 2, and 3 as the parametric monitoring and recording system to demonstrate compliance with the Synthetic Minor Operating Permit, including the determination of carbon breakthrough and verification of system control efficiencies.

6. Within 90 days of either exceeding 4,500 tons of steel production at Plant 1 or Plant 2 or of an indication that production will exceed 4,500 tons of steel at Plant 1 or Plant 2, unless prior to the expiration of the 90-day period the APCO approves a later date not to exceed 180 days of the issuance of the SMOP, the

owner/operator shall properly install a District-approved FID system to measure and record both the inlet and outlet volatile organic compounds (VOC) concentration of each of the carbon adsorption systems for A-1007 at Plant 1 and A-2007 at Plant 2. This parametric monitoring system shall provide for the calculation and recording of VOC mass emissions from the inlet and outlet of each carbon adsorption system, control efficiencies, and carbon breakthrough determinations.
[Basis: Regulations 2-6-423, 2-1-403, 1-523, 1-301, 7, cumulative increase, Rule 2-5]

7. The owner/operator shall properly operate each FID system at all times that any of the respective sources that are being abated by each carbon adsorption system is operating. Each FID system shall do the following:
   a. Continuously monitor (i.e. generate at least one valid data point of VOC concentration every l5 minutes) and record at both the inlet and outlet at each carbon adsorption system. If necessary as determined by the APCO, the owner/operator shall substitute the missing data through use of a best engineering practice acceptable to the APCO.
   b. Continuously calculate VOC mass emissions from each inlet and outlet VOC concentration data point.
   c. Calculate the abatement efficiency of each carbon adsorption system for each set of inlet and outlet data points and averaged over each calendar day and carbon cycle.
   d. Determine VOC concentrations by subtracting the FID system bias from the FID measurement.

   The FID system shall be subject to the requirements of Regulation 1-523 and those requirements set forth in Parts 8 and 9 below.
   [Basis: Regulations 1-523, 2-6-423, 1-301, 7, cumulative increase]

8. The owner/operator of the facility's FID systems shall:
   a. Properly maintain the FID systems and keep the FID systems in good repair;
   b. Repair FID monitors expeditiously, which shall be no later than 24 hours after discovery of a FID-related malfunction;
   c. Calibrate each FID at least once on each day of operation of the respective carbon adsorption system and re-calibrate each FID following its repair or maintenance;
   d. Maintain monitors to be accurate within 20% when compared with a reference test method or within 10% of the applicable standard including the limits contained within these conditions;
   e. Replace or clean FID system tubing during carbon change-out of the FID's respective carbon adsorption system in order to minimize FID system bias; and
   f. Establish FID system bias weekly using hydrocarbon-free air or zero gas introduced to the probe tip. The system bias shall be used until the next system bias is determined. The owner/operator shall maintain the system bias to less than 30 ppmv THC as C1.

   [Basis: Regulations 1-523, 2-6-423, 2-1-403, 7, 1-301, Cumulative Increase]

9. The owner/operator shall properly maintain all carbon adsorption systems and keep all the carbon adsorption systems in good repair at all times in accordance with the manufacturer's specifications and in a manner to assure that both the carbon adsorption systems and the abated sources remain in compliance with this SMOP.
   [Basis: Cumulative Increase, Regulation 2-1-403]

10. The owner/operator shall properly operate A-3008 at Plant 3 at all times during any mixing, pouring, cooling, and/or shakeout operations at S-3019 Pouring and Cooling Area, S-3004 Shakeout Station, and/or S-3014 Mixer. If carbon breakthrough, as defined below, occurs at A-3008, the owner/operator shall cease immediately all mixing, pouring and shakeout operations at Plant 3. The owner/operator shall replace all carbon in A-3008 at Plant 3 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below. If a pouring operation has occurred within the previous 24 hours of carbon breakthrough, the owner/operator shall not replace the carbon until A-3008 has abated the emissions from the cooling molds/castings for at least 24 hours from the time of the last pour. Abatement shall continue until carbon replacement.

For the purposes of this SMOP "carbon breakthrough" for A-3008 at
3 occurs when any one of the following conditions exists at A-3008:

i. the inlet total hydrocarbon (THC) loading is greater than or equal to 220 pounds per calendar day, the abatement efficiency is less than 88.0 % by weight averaged over the twenty-four period of each calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds, or
ii. the inlet THC loading is less than 220 pounds per calendar day, the outlet THC emissions are greater than or equal to 55 pounds per calendar day, and the inlet cumulative THC loading is greater than or equal to 5,640 pounds.

The owner/operator shall not exceed an inlet THC loading that measures or exceeds 15,000 pounds.
[Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

11. The owner/operator shall properly operate A-1007 at Plant 1 at all times during the operation of any or all of S-1002 Pour Off Area, including cooling operations; S-1003 B Shakeout; S-1004 A Shakeout; A-1001 Baghouse; and A-1008 Baghouse. If carbon breakthrough, as defined below occurs at A-1007, the owner/operator shall cease immediately all pouring and shakeout operations at Plant 1. Furthermore, the owner/operator shall replace all carbon in A-1007 at Plant 1 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

    Breakthrough definition will be determined within applications required to be submitted as specified in this part below.

    In order to establish the initial and subsequent carbon breakthrough-related parameters, the owner/operator shall submit applications to the District within 30 days of collection of 6 months, one year, and two years of FID data from the date of issuance of this permit condition. The APCO shall determine enforceable parameters for Plant 1 following similar FID data analysis used to determine the carbon breakthrough-related parameters for Plant 3 in Part 10.
    [Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

12. The owner/operator shall properly operate A-2007 at Plant 2 at all times during the operation of any or all of S-2022, S-2023, S-2026, S-2029, S-2030, S-2031, S-2032, A-2001, and A-2002. If carbon breakthrough, as defined below, occurs at A-2007, the owner/operator shall cease immediately all pouring and shakeout at Plant 2. Furthermore, the owner/operator shall replace all carbon in A-2007 at Plant 2 with fresh carbon no later than 24 hours after carbon breakthrough has occurred as defined below, unless a pouring operation has occurred within the previous 24 hours. Molds/casts that are cooling, while breakthrough has occurred shall continue to be abated for at least 24 hours from the time of the last pour prior to the carbon change out. Abatement shall continue until carbon replacement.

    Breakthrough definition will be determined within applications required to be submitted as specified in this part below.

    In order to establish the initial and subsequent carbon breakthrough-related parameters, the owner/operator shall submit applications to the District within 30 days of collection of 6 months, one year, and two years of FID data from the date of issuance of this permit condition. The APCO shall determine enforceable parameters for this Plant 2 following similar FID data analysis used to determine the carbon breakthrough-related parameters for Plant 3 in Part 10
    [Basis: Regulations 2-6-423, 2-1-403, 7, 1-301, cumulative increase]

13. The owner/operator shall operate each carbon adsorption system (A-1007, A-2007, A-3008) to achieve a "minimum control efficiency," which shall be at least 90.5% by weight on a carbon cycle basis. For the purposes of this SMOP, a carbon cycle commences on the date of installation of a load of "fresh" carbon at the carbon adsorption system through the date of removal of that load as "spent" carbon. The owner/operator shall demonstrate compliance with the "minimum control efficiency" through the use of the FID data on each carbon adsorption system's inlet and outlet concentration measurements and verified on a carbon cycle basis. If the owner/operator discovers that a carbon adsorption system has failed to meet the "minimum control efficiency," the owner/operator shall report the non-compliance in accordance with Part 55.
[Basis: Regulations 2-6-423, 2-1-403, 2-5]

14. The owner/operator shall have on-site a full replacement load of fresh carbon for carbon change out at A-1007, A-2007, or A-3008 no later than five business days following carbon replacement at A-1007, A-2007, or A-3008. The owner/operator shall notify the District staff no later than three business days after each carbon replacement.

    The following is considered full replacement load for each carbon abatement device:

A-1007	12,350 lbs/carbon bed	37,000 lbs/three carbon beds
A-2007	9,667 lbs/carbon bed	29,000 lbs/three carbon beds
A-3008	52,000 lbs/carbon	

    [Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

15. If carbon breakthrough occurs as defined in Parts 10, 11, and/or 12, the owner/operator shall submit a report of non-compliance in accordance with Part 55.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

16. The owner/operator of Plant 1, 2, and 3 shall properly install and properly operate both audible and visual alarms to be triggered at carbon breakthrough as defined in Part 10, 11, and/or 12.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

17. The owner/operator shall not operate the carbon adsorption systems in a manner such that the outlet THC concentration exceeds the inlet THC concentration measured as C1 by the FIDs.
[Basis: Regulation 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

18. The owner/operator shall properly maintain and properly operate a continuous pressure monitor that shall measure and record the pressure drop across each carbon adsorption system carbon bed and each carbon system prefilter. The owner/operator shall cease all pouring and shakeout operations whenever the pressure drop across each carbon adsorption system carbon bed that abates the respective pouring and shakeout operations is lower than one inch water gauge and greater than nine inches water gauge.
[Basis: Regulations 2-1-403, 2-6-423, 1-301, 2-5-501, 7]

19. Within 30 days of issuance of the SMOP, the owner/operator shall submit to the Director of Engineering the operating range of the prefilter for each carbon adsorption system carbon bed, which will become an enforceable permit condition. The APCO shall administratively add the pressure drop parametric condition including a monitoring frequency.
[Basis: Regulations 2-1-403, 2-6-423]

20. The owner/operator shall not change materials that may increase either VOC and/or HAP emissions, or result in the emissions of a toxic air contaminant not previously emitted, without obtaining prior approval of an application for the revision from the District Engineering Division. Any change in materials shall be submitted on a Data Form X with an attached MSDS. The owner/operator of this

facility (including Plants 1, 2, and 3) shall not use any materials containing chlorinated compounds without obtaining prior approval from the District Engineering Division.
[Basis: Regulations 2-1-301, 7, 1-301, 2-5, cumulative increase]

21. The owner/operator shall not use purchased pre-coated sand at Plant 3. Prior to the use of purchased pre-coated sand at Plant 3, the owner/operator shall submit an application to the District in order to obtain an Authority to Construct and/or Permit to Operate for the use of purchased pre-coated sand at Plant 3.
[Basis: Regulation 2-5, Cumulative Increase]

EMISSIONS CAPTURE / COLLECTION

Facility (Plants 1, 2, and 3):

22. The owner/operator shall maintain a negative pressure at each of the plant's exterior doors, windows, and other openings as identified and required within Appendix D of the facility's Odor Management Plan.
[Basis: Regulations 2-1-403, 2-6-423]

23. The owner/operator shall maintain a negative pressure at each of the plant's interior doors, windows, and other openings as identified and required within Appendix F of the facility's Odor Management Plan.
[Basis: Regulations 2-1-403, 2-6-423]

Plant 1:

24. The owner/operator of the Plant 1 S-1004 Line "A" deck conveyor system shall maintain all rubber/plastic strips in good condition and ensure that there are no missing rubber/plastic strips or damaged strips. The owner/operator shall not operate the S-1004 Shake Out if there is any missing or damaged rubber/plastic strips.
[Basis: Regulations 2-1-403, 2-6-423]

25. The owner/operator of Plant 1 S-1003 Shake Out shall not store or allow any open or cracked molds outside of the Plant 1 shakeout station, except as provided below for flasked molds. The owner/operator shall only open molds that are in the shakeout station, except that it may open flasked molds (unflasking) up to 5 minutes prior to placing the molds in the shakeout station. The owner/operator of Plant 1 S-1003 "Line B" shall not remove opened or cracked molds until shakeout is completed in the Shake Out Station. The owner/operator shall not cease shakeout until all castings in the shakeout station are removed from the molds.
[Basis: Regulations 2-1-403, 2-6-423]

26. The owner/operator shall abate all pouring and cooling operations on the Main Floor Area of S-1002 by A-1007.
[Basis: Regulations 2-1-403, 2-6-423]

Plant 3:

27. The owner/operator of Plant 3 shall keep the two exhaust vents above the molding area (S-3014) fully closed at all times of operation of S-3014. The owner/operator of Plant 3 shall shut off the roof fans and fully close the dampers when the roof intake vents are shut off. The owner/operator shall only perform maintenance on S-3014 while S-3014 is not operating. The owner/operator of S-3014 shall only open these two exhaust vents above S-3014 during periods of maintenance.

[Basis: Regulations 2-1-403, 2-6-423]

28. The owner/operator of Plant 3 shall not have any fugitive visible emissions from S-3004 at Plant 3, while S-3004 Casting Mold Shakeout Station is operating. The owner/operator shall complete the shakeout and ensure that sand is not left and/or stored in S-3004.
[Basis: Regulations 2-1-403, 2-6-423]

BAGHOUSE MONITORING AND SOURCE TEST REQUIREMENTS

Notes: Baghouses associated with carbon or electric arc furnaces (EAFs) require broken bag leak detection device or APCO-pre-approved alternative in order to identify improper operation of the baghouses, which will require immediate corrective action. All other baghouses require pressure drop monitoring. Basis: 2-1-403.

Plant 1 Broken Bag Leak Detection Device (A-1001 and A-1008 CARBON and A-1009 EAF)
Plant 1 Pressure Drop (A-1001, A-1002, A-1003, A-1004, A-1006, S-1008, S-1009)

Plant 2 Broken Bag Leak Detection Device (A-2001 and A-2002 CARBON and A-2003 EAF)
Plant 2 Pressure Drop (A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, S-2010)

Plant 3 Broken Bag Leak Detection Device (A-3003 and A-3007 CARBON and A-3001 EAF)
Plant 3 Pressure Drop (A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, A-3007)

29. The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 1 Source S-1001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-1009 Baghouse at Plant 1.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

30. The owner/operator shall route all PM emissions, including PM10 emissions, from Plant 2 Source S-2027 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-2003 Baghouse at Plant 2.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

31. The owner/operator shall route all PM emissions, including PM10 emissions, from Source S-3001 Electric Arc Furnace, from the Pouring Operations at the Electric Arc Furnace ladle, and the A-line ladle, to A-3001 Baghouse at Plant 3.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-301, 6-1-310, 6-1-311]

32. The owner/operator of Plant 1 A-1009 Baghouse shall not exceed PM10 emissions of 0.0017 grains per dry standard cubic foot as determined by District-approved methods.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, BACT, Cumulative Increase]

SOURCE TEST REQUIREMENTS

33. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved PM10 source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the emissions limits in Parts 1 and 2 and grain loading limits in Part 32 and in Condition 24466, 24547, and 24548. The owner/operator shall repeat the source testing on an annual basis thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

34. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator of the facility shall conduct District approved CO source tests at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the individual source (S-1001, S-2027, S-3001) CO limits in Conditions 24466, 24547, and 24548 as well as the facility-wide CO limit in Part 1. The owner/operator shall repeat the source testing on a biennial (occurring every two years) basis thereafter. `
[Basis: Regulations 2-6-423, 2-1-403, Cumulative Increase]

35. No later than 120 days from the issuance of this SMOP or the date a source (S-1001, S-2027, S-3001) begins operating if is not operating at the time of SMOP issuance, the owner/operator shall conduct District-approved source tests for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM at each Baghouse (A-1009, A-2003, A-3001) abating an Electric Arc Furnace (S-1001, S-2027, S-3001) at the facility to determine initial compliance with the HAP limits in Part 1. The owner/operator shall provide the steel production rate data during each source test in order to determine an emission factors for each test point. The owner/operator shall repeat the source testing once every 3 years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

36. No later than 120 days from the issuance of this SMOP or the date S-3001 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3001 EAF shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese, mercury, nickel, selenium and zinc) and filterable PM to characterize the emissions from Plant 3 S-3001 EAF (post-modifications to improve capture efficiency). Test points should include the inlet to the baghouse (A-3001), the outlet from the baghouse and the melt shop roof vents. The owner/operator shall report the steel production rate during the test to the District in order to calculate emission factors for each test point.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

37. No later than 120 days from the issuance of this SMOP or the date S-3004 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 Shakeout shall conduct a one-time source test for the full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs (contained in Reg. 2, Rule 5), benzene, formaldehyde and NMHC to characterize emissions separate from the S-3019 Pour Area and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007) and before and after the carbon bed (A-3008). The owner/operator shall provide to the District the amount of sand in the molds processed during the test in order to calculate emission factors.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

38. No later than 120 days from the issuance of this SMOP or the date S-3019 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3, S-3019, Pour Area shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize emissions separate from the S-3004 Shakeout and S-3014 & S-3018 Mold Mixing Area/Coating Operation emissions. The test points should be in the ducting before the split to the two baghouses (A-3003, A-3007), and before and after the carbon bed (A-3008). The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test should include not only the pouring operation, but also a cooling period.
[Basis: Regulations 2-6-423, 2-1-403, 2-5]

39. No later than 120 days from the issuance of this SMOP or the date S-2029 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2029, Shell Mold Pouring Station shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2029 emissions separate from S-2031 Shake Out & Tray Sanding, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2029, but before the common ducting for the other sources. Testing should be done for the sand molds that are prepared using the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

40. No later than 120 days from the issuance of this SMOP or the date S-2031 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2031, Shakeout & Tray Sanding, shall conduct a one-time source test for full set of metals (arsenic, beryllium, cadmium, total chromium, hexavalent chromium, copper, lead, manganese mercury, nickel, selenium and zinc), filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2031 emissions separate from S-2029 Shell Mold Pouring Station, S-2030 Cast Mold Cooling and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2031, but before the common ducting for the other sources. Testing shall be conducted on sand molds that use the resin binder and sand mixed on-site. The owner/operator shall report to the District the amount of sand in the molds processed during the test in order to calculate emission factors.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

41. No later than 120 days from the issuance of this SMOP or the date S-2030 begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2, S-2030, Cast Mold Cooling Room shall conduct a one-time source test for filterable PM, PAHs, benzene, formaldehyde and NMHC to characterize S-2030 emissions separate from S-2029 Shell Mold Pouring Station, S-2031 Shake Out & Tray Sanding and S-2032 Rotoblast emissions. The test point should at a location downstream of S-2030, but before the common ducting for the other sources. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

42. No later than three years from the issuance of this SMOP or the date a source (S-1002, S-1003, S-1004) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 1, S-1002 (Pour-Off Area), S-1003 (B Shake Out), and S-1004 (A Shake Out) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 1. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

43. No later than three years from the issuance of this SMOP or the date a source (S-2029, S-2030, S-2031) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 2 S-2029 (Shell Mold Pouring Station), S-2030 (Cast Mold Cooling Room), and S-2031 (Shakeout & Tray Sanding) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions

from pouring, cooling, and shakeout operations at Plant 2. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

44. No later than three years from the issuance of this SMOP or the date a source (S-3004, S-3019) begins operating if is not operating at the time of SMOP issuance, the owner/operator of Plant 3 S-3004 (Casting Mold Shake Out Station) and S-3019 (Pouring and Cooling) shall conduct a source test for carbon monoxide to characterize carbon monoxide emissions from pouring, cooling, and shakeout operations at Plant 3. The owner/operator shall report to the District the amount of steel processed during the test in order to calculate emission factors. The duration of the test shall be pre-approved by the APCO in order to provide sufficient time to determine the amount of emissions that off-gas from the molds. The owner/operator shall obtain approval of the testing methodology by the District's Engineering and Technical Divisions prior to conducting the source test. The owner/operator shall repeat the source testing once every five years thereafter.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

45. The owner/operator of the facility shall conduct District-approved annual PM10 source tests at each baghouse upstream of each carbon adsorption system. In order to determine compliance with the control efficiencies used in Part 2, the owner/operator shall test the following points:

Plant 1: inlet and outlet of A-1001 and A-1008 and the outlet of A-1007
Plant 2: inlet and outlet of both A-2001 and A-2002 and the outlet of A-2007
Plant 3: inlet and outlet of both A-3003 and A-3007 and the outlet of A-3008
[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]

46. The owner/operator shall submit results of all source test required by this condition to the District staff no later than 60 days after the source test. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section prior to conducting any tests and shall comply with all applicable testing requirements as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates at least 7 days prior to testing.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

SOURCE TEST FREQUENCY

47. The owner/operator of the facility shall conduct District approved PM10 source tests at each of the following baghouses per the frequencies specified below:

Annual Source Test Frequency
Plant 1 (A-1001, A-1004, and A-1009)
Plant 2 (A-2001, A-2002, A-2003)
Plant 3 (A-3001)

Once Every Three Years Source Test Frequency
Plant 1 (A-1002 and A-1008)
Plant 2 (A-2004 and A-2010)
Plant 3 (A-3002, A-3003, A-3006, and A-3007)

Once Every Five Years Source Test Frequency
Plant 1 (A-1003 and A-1006)
Plant 2 (A-2005)
Plant 3 (A-2004)

in order to determine compliance with the abatement efficiencies and/or grain loading contained in Part 2.
[Basis: Regulations 2-6-423, 2-1-403, 6-310, 2-5, Cumulative Increase]

BAGHOUSE PRESSURE DROP MONITORING REQUIREMENTS

48. The owner/operator shall properly install and properly operate a device at each that measures the pressure drop across each of the following baghouses:

Plant 1: A-1001, A-1002, A-1003, A-1004, A-1006, A-1008, A-1009, and A-1010 Baghouses
Plant 2: A-2001, A-2002, A-2003, A-2004, A-2005, A-2006, and A-2010 Baghouses
Plant 3: A-3001, A-3002, A-3003, A-3004, A-3005, A-3006, and A-3007 Baghouses

The owner/operator shall check each measuring device for plugging at least once every three months. The owner/operator shall cease operation of any equipment abated by any of the abatement devices listed above, when the pressure drop measured across an associated baghouse is outside of the range identified in Part 50 and shall not commence operations, until the pressure drop range of the baghouse returns to compliance.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

49. The owner/operator of the facility shall check or inspect the pressure drop across the baghouse at the three plants daily to ensure proper operation.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

50. The owner/operator shall not allow the pressure drop at any baghouse to exceed any of the following pressure ranges (inches water gauge):

Plant 1 Baghouses

Device	Minimum	Maximum
A-1007	1.0	9.0
A-1002	[TBD]	[TBD]
A-1003	[TBD]	[TBD]
A-1004	[TBD]	[TBD]
A-1006	[TBD]	[TBD]
A-1008	1.0	5.0
A-1009	2.0	12.0
A-1010	0.0	4.0

Plant 2 Baghouses

Device	Minimum	Maximum	
A-2001	1.0	9.0	7 sections and 7 pressure differential gauges
A-2002	1.0	9.0	
A-2003	1.0	9.0	4 sections and 4 pressure differential gauges
A-2004	1.0	9.0	
A-2005	1.0	9.0	

A-2006	1.0	9.0
A-2010	1.0	6.0

Plant 3 Baghouses

Device	Minimum	Maximum
A-3001	2.0	12.0
A-3002	1.0	9.0
A-3003	4.5	7.0
A-3004	1.0	7.0
A-3005	0.0	2.0
A-3006	1.0	9.0
A-3007	4.5	7.0

[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

51. The owner/operator of the facility shall check or inspect all baghouses at the three plants daily for evidence of particulate breakthrough. If breakthrough is evident from plume observations, dust buildup near the stack outlet, or abnormal pressure drops, the filter bags shall be checked for any tears, holes, abrasions, and scuffs, and replaced as needed.
[Basis: Regulations 2-6-423, 2-1-403, 6-1-310, 2-5, Cumulative Increase]

52. The owner/operator of the facility shall maintain and operate at sufficient intervals the pulsejet cleaning system to maintain compliance with Part 2 above.
[Basis: Regulations 2-6-423, 2-1-403]

BROKEN BAG DETECTORS

53. No later than 180 days from the issuance of the SMOP, the owner/operator shall properly install and properly operate a District-approved broken bag detection device, unless it is determined by the District not to be technologically feasible, then the owner/operator shall properly install and properly operate a District-approved alternative continuous monitoring and recording device, that shall trigger an audible alarm when a preset level is exceeded, on each of the following baghouses:

Plant 1: A-1001, A-1008, and A-1009 Baghouses
Plant 2: A-2001, A-2002, and A-2003 Baghouses
Plant 3: A-3001, A-3003, and A-3007 Baghouses

The owner/operator shall cease operation of all equipment abated by any of abatement devices listed above, when an associated alarm is triggered, until a District-approved corrective action has been taken. The owner/operator shall only operate these baghouses in compliance with the set pressure ranges.
[Basis: Regulations 6-1-301, 6-1-310, 6-1-311, 2-1-403, 2-6-423]

ODOR MANAGEMENT PLAN

54. The owner/operator shall comply at all times with Sections 1 through 6 of the October 3, 2008 Odor Management Plan (OMP) as may be amended from time to time and approved by the APCO. The owner/operator shall submit amendments to the OMP within 30 days after the issuance of either an Authority to Construct (or a Permit to Operate if an Authority to Construct is not required) relating to the OMP.
[Basis: Regulations 2-1-403 and 2-6-423]

RECORDKEEPING SECTION

REPORTING NON-COMPLIANCE AND REQUIRED CORRECTIVE ACTION

55. The owner/operator shall report non-compliance with any permit condition in writing to the Director of Compliance and Enforcement with a copy to the Director of Engineering within 10 calendar days of discovery of non-compliance. The report shall describe the incident and any corrective action taken to address the incident and to assure future compliance with the permit condition. [Basis: Regulation 2-6-423, 2-1-403]

If the corrective action proposed to be taken is to modify the applicable limit set forth in Parts 1, 2, 6, 10, 11, 12, 13, or 14, the owner/operator shall submit a permit application within 30 days of the date of discovery to modify that limit.

QUARTERLY REPORTING

56. In order to demonstrate compliance with Parts 1 and 2, the owner/operator shall submit a District-approved quarterly throughput and emissions report within thirty days of the end of the previous calendar quarter. The report shall provide the information listed below with supporting documentation for each of the previous three months, the previous calendar quarter and the previous consecutive twelve-month period. The owner/operator shall calculate the consecutive 12-month emissions estimates using the actual throughputs and District-approved emissions factors and assumptions contained in Part 2. The report shall include:

    a. Monthly throughputs from all sources contained in Part 2.
    b. Total Plant 1 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
    c. Total Plant 2 emissions POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
    d. Total Plant 3 emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons/month.
    e. Total facility emissions of POC, CO, PM10, SO2, individual HAPs and combined HAPs, in tons.
    f. All FID inlet and outlet monitoring data for the carbon adsorption abatement system and/or carbon beds for each plant.
    g. For each plant, the cumulative total hydrocarbon (THC) mass emissions for each carbon cycle, measured at the inlet of each carbon adsorption system that is required to have a THC mass emissions monitoring device pursuant to Part 6.
    h. Carbon control efficiencies corresponding to the 90-minute averages for each of the carbon adsorption abatement systems as determined by the FID monitoring systems.
    i. For each plant's carbon adsorption system, the average control efficiencies averaged over each carbon cycle as determined by the FID monitoring systems.
    j. The control efficiencies determined in Part 13.
    k. Dates and amounts of each carbon replacement as required by Parts 10, 11, and 12.
    l. Combined facility aerosol paint spray can usage in gallons and emissions in pounds or tons. The POC emissions shall be included with the emissions estimates in Part 3 in order to demonstrate compliance with the POC emission limit contained in Part 1a.
    m. All material safety data sheets for all aerosol spray paints used during the previous quarterly period if either the MSDS has changed since the previous MSDS submittal for that aerosol spray paint or the owner or operator has not used such aerosol spray paint within the past five years and identification of all materials used including quantities of each material.
    n. Cumulative steel production rates for the previous quarter and consecutive 12-month period at each facility.

The owner/operator shall submit the report to the Director of Engineering with a copy to the Director of Compliance & Enforcement. The owner/operator shall follow the reporting procedure outlined in Part 55 for any discovery of non-compliance or potential non-compliance.

The owner/operator shall retain all quarterly throughput and emissions reports and accompanying documentation at the facility for five years from the date of the report. The owner/operator will make the reports and accompanying documentation available for inspection by District staff upon request. [Basis: Regulations 2-6-423, 2-1-403, Synthetic Minor]

DAILY RECORDKEEPING

57. In order to demonstrate compliance with the above permit conditions, the owner/operator of the facility shall maintain the following **production/emissions-related information** in a District-approved daily log:

    a. In order to demonstrate compliance with Parts 1, 2, and 10 through 14, carbon capture efficiency records for each source contained in Part 2, in the units used in Part 2, with monthly summaries and consecutive 12-month totals
    b. The total amount of steel throughput at each plant in tons at each plant
    c. The total amount of binder and catalyst usage in tons at each plant
    d. The total amount of coated sand usage in tons at each plant
    e. The total amount of pre-coated sand usage in tons at each plant
    f. The total amount of stainless steel castings produced in tons at each plant
    g. Time of first casting poured and last casting poured at each plant
    h. Start and end times of shakeout at each plant

    All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
    [Basis: Cumulative Increase, Regulation 1-441]

FID/CARBON ADSORPTION/ODOR-RELATED RECORD KEEPING

58. In order to demonstrate compliance with the above permit conditions, the owner/operator shall maintain the following **FID/Carbon Adsorption/Odor-related information** in a District-approved daily log:

    a. The most recent odor panel results in units of DTT for each carbon bed and/or system.
    b. FID system bias determination of the sampling/analysis system and the time and date it was established at each carbon bed and/or system.
    c. All pressure drop data across each carbon bed or carbon adsorption system.
    d. The inlet temperature to each carbon adsorption system carbon bed.
    e. Results of all source testing and inlet velocity testing.
    f. FID 90 minute and one-minute average total hydrocarbon (THC) concentrations from both the inlet and outlet of each carbon adsorption system carbon bed, as ppm C1.
    g. FID daily and cumulative hydrocarbon mass emissions at both the inlet and outlet of each carbon adsorption system carbon bed.
    h. At the request of the APCO, make monitoring data available within 30 days following the replacement of carbon at each carbon adsorption system.
    i. Carbon-cycle basis abatement efficiency of each carbon adsorption system carbon bed.

j. Daily carbon control efficiency, mass emissions at both the inlet and outlet for the purposes of determining carbon breakthrough and compliance per Parts 10 through 14.
k. The date that carbon change-outs occur and the steel throughput in tons between carbon change-outs for each plant.
l. Any carbon adsorption system's non-operation times lasting more than one hour.
m. Carbon prefilter change-outs for each carbon bed or system at each plant.
n. Manometer readings for each of the carbon prefilters at each plant.
o. Records that demonstrate that the owner/operator timely ordered the replacement carbon to demonstrate compliance with Part 14.
p. All source test data and results for each plants.
q. All records required per Parts 14 and 15.
r. Records of maintenance and repairs, including the date of discovery of the breakdown, and the date and nature of the repair, as required by Part 8.
s. Records to verify daily FID system calibrations.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, Regulation 1-441]

DAILY BAGHOUSE RECORD KEEPING

59. In order to demonstrate compliance with the above permit conditions, the owner/operator of the facility shall maintain the following **baghouse monitoring information** in a District-approved daily log:

a. Records of all inspections and all maintenance work including bag replacements for each baghouse. Records of each inspection shall consist of a District-approved log containing the date of inspection and the initials of the personnel that inspects each of the above baghouses.
b. The pressure drop records across all baghouses as required by Parts 49 and 50 above.
c. In order to demonstrate compliance with Part 53, the time, date, and duration of each broken bag leak detector alarm event and the corrective action taken.
d. All source test data and results for each plants.

All records shall be retained on-site for five years from the date of entry and shall be made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, 1-441]

60. The owner/operator shall submit an annual compliance certification report to both the Director of Engineering and Director of Compliance & Enforcement consistent with requirements of 2-6-426. The owner/operator shall certify the facility's compliance with the requirements of all parts, including Parts 1, 2, 10, 11, 12, and 13. The annual report shall specifically include all emissions-related information including, but not limited to, throughput, capture/control efficiencies, and emissions factors. If during the certification review, the owner/operator determines that any of the emissions-related items listed above are no longer accurate, or are underestimating the emissions from any source, then the owner/operator shall submit a completed permit application to the District within 30 days of either the annual compliance certification notice or any monitoring data throughout the year that indicates inaccurate or underestimated emissions from the source, such as FID or source test data.
[Basis: Regulations 2-1-403, 2-6-423, cumulative increase, 1-441]

Condition # 24466
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Plant #1

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 1 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No. 1001, Arc Furnace abated by A-1009
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	1.24E+02	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	3.62E+0e	2.16E+04	2.52E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 1002, Pour-off area abated by A-1008 and A-1007
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	4.52E-01	86.50%	90.50%
CO	6.00E+00	86.50%	0%
PM10/2.5	5.83E-01	86.50%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.58E+02	4.24E+02	6.82E+02
CO	3.61E+04	5.63E+03	4.17E+04
$PM_{10/2.5}$	5.25E+00	5.47E+02	5.52E+02

Source No. 1003, B Shake Out (Dust Collection) abated by A-1001, A-1007
Max. Annual throughput = 22,920 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.00E-02	95.00%	90.50%
$PM_{10/2.5}$	1.00E+01	95.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	1.65E+02	9.17E+01	2.57E+02
$PM_{10/2.5}$	3.27E+02	1.15E+04	1.18E+04

Source No.1004, A Shake Out (Dust Collection) abated by A-1001, A-1007
Max. Annual throughput = 45,840 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	7.68E-02	99.00%	90.50%
PM10/2.5	9.62E+00	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	3.31E+02	3.52E+01	3.66E+02
PM10/2.5	6.55E+02	4.41E+03	5.06E+03

Source No.1005, SAND SYSTEM (DUST COLLECTION) abated by A-1001, A-1007
Max. Annual throughput = 63,140 tons sand
Max. Annual throughput = 1,094 gallons mold release

Pollutants	Unabated Emissions Factors (lb/unit)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%
VOC	3.05E+00	99.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.06E+01	3.41E+02	3.92E+02
VOC	3.14E+02	3.34E+01	3.48E+02

Source No.1006, SAND COOLER, 6 SCREEN, abated by A-1001, A-1007
Max. Annual throughput = 34,727 tons sand

Max. Annual throughput = 330 gallons mold release

Pollutants	Unabated Emissions Factors (lb/unit)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%
VOC	1.60E+00	99.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.78E+01	1.88E+02	2.15E+02
VOC	4.98E+01	5.29E+00	5.51E+01

Source No.1007, SAND SCREEN abated by A-1001, A-1007
Max. Annual throughput = 34,727 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.78E+01	1.88E+02	2.15E+02

Source No.1008, MULLER abated by A-1001, A-1007
Max. Annual throughput = 63,140 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.06E+01	3.41E+02	3.92E+02

Source No.1010, MULLER, CORE SAND abated by A-1001
Max. Annual throughput = 4929 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.95E+00	2.66E+01	3.06E+01

Source No.1011, MULLER abated by A-1010
Max. Annual throughput = 5 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.01E-03	2.70E-02	3.10E-02

Source No.1012, CLEANING & GRINDING DEPT. abated by A-1004
Max. Annual throughput = 12,600 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.29E+01	2.14E+03	2.22E+03

Source No.1013, ARC-AIR BOOTH abated by A-1004
Max. Annual throughput = 8,760 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.39E-02	8.76E-01	9.10E-01

Source No.1014, ARC-AIR BOOTH abated by A-1006
Max. Annual throughput = 8,760 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	90.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	3.39E-02	8.76E-01	9.10E-01

Source No.1015, PANGBORN TABLE BLAST abated by A-1003
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	99.57%

$PM_{2.5}$	4.00E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	7.22E-01	0.00E+00	7.22E-01
$PM_{2.5}$	7.22E-02	0.00E+00	7.22E-02

Source No.1016, ROTO-BLAST abated A-1002
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	98.00%
$PM_{2.5}$	4.00E-03	100.00%	98.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	3.36E+00	0.00E+00	3.36E+00
$PM_{2.5}$	3.36E-01	0.00E+00	3.36E-01

Source No.1017, ROTO-BLAST abated A-1002
Max. Annual throughput = 4,200 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	4.00E-02	100.00%	98.00%
$PM_{2.5}$	4.00E-03	100.00%	98.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	3.36E+00	0.00E+00	3.36E+00
$PM_{2.5}$	3.36E-01	0.00E+00	3.36E-01

Source No. 1018, HEAT TREATING FURNACES
Max. Annual throughput = 560,640 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	5.50E+03	0.00E+00	5.50E+03
CO	4.62E+03	0.00E+00	4.62E+03
VOC	3.02E+02	0.00E+00	3.02E+02
$PM_{10/2.5}$	4.18E+02	0.00E+00	4.18E+02

SO_2	3.30E+01	0.00E+00	3.30E+01

Source No. 1019, Raw Sand Receiving
Max. Annual throughput = 30,000 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	99.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	2.41E+01	1.62E+02	1.86E+02

Source No. 1022, Core Bake Ovens (exempt)
Max. Annual throughput = 140,160 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.37E+03	0.00E+00	1.37E+03
CO	1.15E+03	0.00E+00	1.15E+03
VOC	7.56E+01	0.00E+00	7.56E+01
$PM_{10/2.5}$	1.04E+02	0.00E+00	1.04E+02
SO_2	8.24E+00	0.00E+00	8.24E+00

Source No. 1027, Core-Making Operation
Max. Annual throughput = 6,300 gallons binder

Pollutants	Unabated Emissions Factors (lb/gallon)	Capture Efficiency Required	Control Efficiency Required
VOC	6.42E-01	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
VOC	0.00E+00	4.05E+03	4.05E+03

Source No. 32001, MINOR SOURCES (small ladle heater, exempt)
Max. Annual throughput = 29,696 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%

SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	2.91E+02	0.00E+00	2.91E+02
CO	2.45E+02	0.00E+00	2.45E+02
VOC	1.60E+01	0.00E+00	1.60E+01
$PM_{10/2.5}$	2.21E+01	0.00E+00	2.21E+01
SO_2	1.75E+00	0.00E+00	1.75E+00

Emissions from stacks:

Baghouse A-1001
Abating S-1003, S-1004, S-1005, S-1006, S-1007, S-1008, S-1010, S-1011, and S-1019
Required Emissions Limits: 0.0045 gr/dscf
Maximum Flow Rate: 37,287 dscfm
Operation Hour: 8760 hours/year

Baghouse A-1002
Abates: S-1016 and S-1017
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 6,325 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1003
Abates: S-1015
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 3,680 dscfm
Maximum Operation Hour: 8760 hours/year

Baghouse A-1004
Abates: S-1012 and S-1013
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 10,323 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1006
Abates: S-1014
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 40,294 dscfm
Maximum Operation Hour: 6000 hours/year

Baghouse A-1008
Abates: S-1002
Required Emissions Limits: 0.0045 gr/dscf
Maximum Flow Rate: 3,228 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouse A-1009
Abates: S-1001
Required Emissions Limits: 0.0017 gr/dscf

Maximum Flow Rate: 41,443 dscfm
Maximum Operation Hour: 6000 hours/year

Condition # 24548
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Co-Plant #2

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 2 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No.2001, SAND SILO LOADING ELEVATOR abated by A-2005
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.08E+01	2.79E+02	2.90E+02

Source No. 2002, SAND SILO #1 abated by A-2005
Max. Annual throughput = 2,588 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.41E+00	1.40E+02	1.45E+02

Source No. 2003 SAND SILO #2 abated by A-2005

Max. Annual throughput = 2,587 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.41E+00	1.40E+02	1.45E+02

Source No. 2004 BUCKET ELEVATOR abated by A-2005
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.08E+01	2.79E+02	2.90E+02

Source No. 2005 RESIN TANK (LIQUI-BIN)
Max. Annual throughput = 80,000 gallons organic liquid

Pollutants	Unabated Emissions Factor (lb/lb)	Capture Efficiency Required	Control Efficiency Required
VOC	5.91E-04	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.72E+01	0.00E+00	4.72E+01

Source No. 2006 SAND HEATER abated by A-2004
Max. Annual throughput = 37,318 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	99.57%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.66E+02	0.00E+00	3.66E+02
CO	3.07E+02	0.00E+00	3.07E+02
VOC	2.01E+01	0.00E+00	2.01E+01
$PM_{10/2.5}$	1.20E-01	0.00E+00	1.20E-01
SO_2	2.20E+00	0.00E+00	2.20E+00

Source No. 2006 SAND HEATER abated by A-2004
Source No. 2007 SAND COATING abated by A-2004
Source No. 2008 COATED SAND PUG MILL abated by A-2004
Source No. 2009 COATED SAND VIBRATING SCREEN abated by A-2004
Source No. 2010 BUCKET ELEVATOR abated by A-2004
Source No. 2011 COOLING TOWER, COATED SAND abated by A-2004
Source No. 2012 BUCKET ELEVATOR abated by A-2004
Max. Annual throughput = 5,175 tons sand combined

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
CO	4.80E-01	100.00%	0.00%
VOC	1.36E+01	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%
SO_2	4.80E+00	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
CO	2.48E+03	0.00E+00	2.48E+03
VOC	7.04E+04	0.00E+00	7.04E+04
$PM_{10/2.5}$	1.20E+01	0.00E+00	1.20E+01
SO_2	2.48E+04	0.00E+00	2.48E+04

Source No. 2013 CORE MOULDING MACHINE
Source No. 2014 CORE MOULDING MACHINE
Source No. 2015 CORE MOULDING MACHINE
Source No. 2016 CORE MOULDING MACHINE
Source No. 2017 CORE MOULDING MACHINE
Source No. 2018 CORE MOULDING MACHINE
Max. Annual throughput = 493 tons sand combined

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	1.74E+01	0.00E+00	1.74E+01
$PM_{10/2.5}$	2.66E+02	0.00E+00	2.66E+02

Source No. 2013 CORE MOULDING MACHINE
Max. Annual throughput = 6,841 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%

$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.71E+01	0.00E+00	6.71E+01
CO	5.63E+01	0.00E+00	5.63E+01
VOC	3.69E+00	0.00E+00	3.69E+00
$PM_{10/2.5}$	5.10E+00	0.00E+00	5.10E+00
SO_2	4.02E-01	0.00E+00	4.02E-01

Source No. 2014 CORE MOULDING MACHINE
Max. Annual throughput = 6,841 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.71E+01	0.00E+00	6.71E+01
CO	5.63E+01	0.00E+00	5.63E+01
VOC	3.69E+00	0.00E+00	3.69E+00
$PM_{10/2.5}$	5.10E+00	0.00E+00	5.10E+00
SO_2	4.02E-01	0.00E+00	4.02E-01

Source No. 2015 CORE MOULDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2016 CORE MOULDING MACHINE

Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/year)	Total Emissions (lb/year)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2017 CORE MOULDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/year)	Fugitive Emissions (lb/year)	Total Emissions (lb/year)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02
VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2018 CORE MOULDING MACHINE
Max. Annual throughput = 12,265 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.20E+02	0.00E+00	1.20E+02
CO	1.01E+02	0.00E+00	1.01E+02

VOC	6.61E+00	0.00E+00	6.61E+00
$PM_{10/2.5}$	9.14E+00	0.00E+00	9.14E+00
SO_2	7.21E-01	0.00E+00	7.21E-01

Source No. 2019, COATED SAND BIN
Max. Annual throughput = 5,175 tons sand

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	1.20E+01	0.00E+00	1.20E+01

Source No. 2020 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 40,427 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.96E+02	0.00E+00	3.96E+02
CO	3.33E+02	0.00E+00	3.33E+02
VOC	2.18E+01	0.00E+00	2.18E+01
$PM_{10/2.5}$	3.01E+01	0.00E+00	3.01E+01
SO_2	2.38E+00	0.00E+00	2.38E+00

Source No. 2020 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 818 tons sand

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.89E+01	0.00E+00	2.89E+01
$PM_{10/2.5}$	4.42E+02	0.00E+00	4.42E+02

Source No. 2021 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.69E+02	0.00E+00	6.69E+02
CO	5.62E+02	0.00E+00	5.62E+02
VOC	3.68E+01	0.00E+00	3.68E+01
$PM_{10/2.5}$	5.08E+01	0.00E+00	5.08E+01
SO_2	4.01E+00	0.00E+00	4.01E+00

Source No. 2021 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.67E+01	0.00E+00	9.67E+01
$PM_{10/2.5}$	1.48E+03	0.00E+00	1.48E+03

Source No. 2022 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	90.00%	0.00%
CO	8.24E-03	90.00%	0.00%
VOC	5.39E-04	90.00%	90.50%
$PM_{10/2.5}$	7.45E-04	90.00%	0.00%
SO_2	5.88E-05	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.02E+02	6.69E+01	6.69E+02
CO	5.06E+02	5.62E+01	5.62E+02
VOC	3.15E+00	3.68E+00	6.82E+00
$PM_{10/2.5}$	4.58E+01	5.08E+00	5.08E+01
SO_2	3.61E+00	4.01E-01	4.01E+00

Source No. 2022 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand
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Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.92E-02	90.00%	90.50%
$PM_{10/2.5}$	5.40E-01	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.19E+00	1.07E+01	1.99E+01
$PM_{10/2.5}$	1.33E+03	1.48E+02	1.48E+03

Source No. 2023 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 68,229 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	90.00%	0.00%
CO	8.24E-03	90.00%	0.00%
VOC	5.39E-04	90.00%	90.50%
$PM_{10/2.5}$	7.45E-04	90.00%	0.00%
SO_2	5.88E-05	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	6.02E+02	6.69E+01	6.69E+02
CO	5.06E+02	5.62E+01	5.62E+02
VOC	3.15E+00	3.68E+00	6.82E+00
$PM_{10/2.5}$	4.58E+01	5.08E+00	5.08E+01
SO_2	3.61E+00	4.01E-01	4.01E+00

Source No. 2023 SHELL MOLDING MACHINE, TWIN w/ mold adhesive operation
Max. Annual throughput = 2,740 tons sand

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.92E-02	90.00%	90.50%
$PM_{10/2.5}$	5.40E-01	90.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	9.19E+00	1.07E+01	1.99E+01
$PM_{10/2.5}$	1.33E+03	1.48E+02	1.48E+03

Source No. 2024 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 40,427 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%

SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	3.96E+02	0.00E+00	3.96E+02
CO	3.33E+02	0.00E+00	3.33E+02
VOC	2.18E+01	0.00E+00	2.18E+01
$PM_{10/2.5}$	3.01E+01	0.00E+00	3.01E+01
SO_2	2.38E+00	0.00E+00	2.38E+00

Source No. 2024 SHELL MOLDING MACHINE, SINGLE w/ mold adhesive operation
Max. Annual throughput = 818 tons sand

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
VOC	3.53E-02	100.00%	0.00%
$PM_{10/2.5}$	5.40E-01	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.89E+01	0.00E+00	2.89E+01
$PM_{10/2.5}$	4.42E+02	0.00E+00	4.42E+02

Source No. 2025, ABRASIVE BLASTER, CORE AREA abated by A-206
Max. Annual throughput = 263 lbs steel shot

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	8.63E-03	80.00%	90.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.81E-01	4.54E-01	6.35E-01

Source No. 2026 LARGE LADLE HEATER
Max. Annual throughput = 74,635 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	90.50%
$PM_{10/2.5}$	7.45E-04	100.00%	99.85%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	7.32E+02	0.00E+00	7.32E+02
CO	6.15E+02	0.00E+00	6.15E+02
VOC	3.82E+00	0.00E+00	3.82E+00
$PM_{10/2.5}$	8.34E-02	0.00E+00	8.34E-02
SO_2	4.39E+00	0.00E+00	4.39E+00

Source No. 2027 ELECTRIC ARC FURNACE abated by A-2003
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	5.06E+01	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	1.47E+03	8.79E+03	1.03E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 2028 EAF LADLE STATION W/CANOPY HOOD abated by A-2001
Source No. 2029 SHELL MOLD POURING STATION abated by A-2001
Source No. 2031 SHAKEOUT & TRAY SANDING abated by A-2001
Max. Annual throughput = 6,950 tons steel combined

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.33E-02	90.00%	90.50%
$PM_{10/2.5}$	1.61E+01	89.00%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.95E+01	5.79E+01	1.07E+02
$PM_{10/2.5}$	1.49E+02	1.23E+04	1.25E+04

Source No. 2030 CAST MOLD COOLING ROOM abated by A-2002
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	7.20E-02	99.99%	90.50%
CO	6.0E+00	99.99%	0.00%
$PM_{10/2.5}$	2.57E-01	99.99%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.75E+01	5.00E-02	4.76E+01
CO	4.17E+04	4.17E+00	4.17E+04
$PM_{10/2.5}$	2.68E+00	1.79E-01	2.86E+00

Source No. 2032 ROTOBLAST abated by A-2002

Max. Annual throughput = 13,500 tons steel

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.96E-02	100.00%	99.85%
$PM_{2.5}$	3.96E-03	100.00%	99.85%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	8.02E-01	0.00E+00	8.02E-01
$PM_{2.5}$	8.02E-02	0.00E+00	8.02E-02

Source No. 2033 through 2036: ABRASIVE CUT-OFF SAW abated by A-2005
Source No. 2037 through 2040: GRINDER abated by A-2005
Max. Annual throughput = 13,500 tons steel combined

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.88E+01	2.30E+03	2.38E+03

Thermal Sand Recycling System
Source No. 2044 (R-1), Sand Storage Silo abated by A-2010
Source No. 2045 Lump Breaker abated by A-2010
Source No. 2046 Flow Bin (Rejected Material) abated by A-2010
Source No. 2047 Sand Cooler/Air Bed #1 (C-1) Abated by A-2010
Source No. 2048 Material Handling Equipment abated by A-2010
Source No. 2049 (R-1), Thermal Recycling Unit abated by A-2010
Max. Annual throughput = 10,000 tons sand

Pollutants	Unabated Emissions Factor (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	4.85E-02	99.00%	0.00%
$PM_{10/2.5}$	8.55E+00	99.00%	99.57%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	4.80E+02	4.85E+00	4.85E+02
$PM_{10/2.5}$	3.64E+02	8.55E+02	1.22E+03

Thermal Sand Recycling System
Source No. 2044 (R-1), Sand Storage Silo abated by A-2010
Source No. 2045 Lump Breaker abated by A-2010
Source No. 2046 Flow Bin (Rejected Material) abated by A-2010
Source No. 2047 Sand Cooler/Air Bed #1 (C-1) Abated by A-2010
Source No. 2048 Material Handling Equipment abated by A-2010
Source No. 2049 (R-1), Thermal Recycling Unit abated by A-2010

Max. Annual throughput = 186,588 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	100.00%	0.00%
CO	8.24E-03	100.00%	0.00%
VOC	5.39E-04	100.00%	0.00%
$PM_{10/2.5}$	7.45E-04	100.00%	0.00%
SO_2	5.88E-05	100.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.83E+03	0.00E+00	1.83E+03
CO	1.54E+03	0.00E+00	1.54E+03
VOC	1.01E+02	0.00E+00	1.01E+02
$PM_{10/2.5}$	1.39E+02	0.00E+00	1.39E+02
SO_2	1.10E+01	0.00E+00	1.10E+01

Source No. 32000 Miscellaneous Minor Combustion Sources [exempt]
Max. Annual throughput = 37,318 therms

Pollutants	Unabated Emissions Factor (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated Emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	3.66E+02	3.66E+02
CO	0.00E+00	3.07E+02	3.07E+02
VOC	0.00E+00	2.01E+01	2.01E+01
$PM_{10/2.5}$	0.00E+00	2.78E+01	2.78E+01
SO_2	0.00E+00	2.20E+00	2.20E+00

Standards for Baghouses

Baghouses A-2001 and A-2002, Abating S-2026, S-2209, S-2030, S-2031, S-2032
Emission Limit: 0.0045 gr/dscf
Maximum Flow: 40,903 dscfm
Annual Operating Hours: 5263 hours/year

Baghouse A-2003 Abating S-2027
Emission Limit: 0.0013 gr/dscf
Maximum Flow: 22,053 dscfm
Annual Operating Hours: 5263 hours/year

Baghouse A-2004 Abating S-2006, S-2007, S-2008, S-2009, S-2010, S-2011, S-2012, and S-2019
Emission Limit: 0.01 gr/dscf
Maximum Flow: 5,902 dscfm

Annual Operating Hours: 4380 hours/year

Baghouse A-2005 Abating S-2033, S-2034, S-2035, S-2036, S-2037, S-2038, S-2039, and S-2040
Emission Limit: 0.0045 gr/dscf
Maximum Flow: 14,170 dscfm
Annual Operating Hours: 5500 hours/year

Baghouse A-2006 Abating S-2025
Emission Limit: 0.01 gr/dscf
Annual Operating Hours: 8760 hours/year

Baghouse A-2010 Abating S-2044, S-2045, S-2046, S-2047, S-2048, and S-2049
Emission Limit: 0.0013 gr/dscf
Maximum Flow: 10,217 dscfm
Annual Operating Hours: 4992 hours/year

Condition # 24547
Maximum Operating Throughput and Emissions Related Limits
Pacific Steel Casting Plant #3

The owner/operator of Pacific Steel Casting facility (Plant 22605) shall not allow the facility to exceed any of the throughputs, emission factors, and/or emissions specified in these conditions. All data and assumptions contained in these conditions shall be considered enforceable limits.

The owner/operator of the facility shall demonstrate compliance with the emission limits listed in this condition by using the following equations:

Captured emissions = throughput x emission factor x capture efficiency x (1 - control efficiency)

Fugitive emissions = throughput x emission factor x (1 - capture efficiency)

Total emissions = captured emissions + fugitive emissions

The following tables list maximum throughputs, emission factors, and emissions as well as the minimum required capture and control efficiencies for Pacific Steel Casting Plant # 3 sources. These assumptions constitute Synthetic Minor Operating limits as specified in Condition 20207 Part 2.

Source No. 3001, Electric Arc Furnace abated by A-3001
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	2.00E-01	97.50%	0.00%
CO	1.80E+00	97.50%	0.00%
VOC	3.50E-01	97.50%	0.00%
$PM_{10/2.5}$	1.03E+02	97.50%	99.57%
SO_2	7.00E-01	97.50%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	1.36E+03	3.48E+01	1.39E+03
CO	1.22E+04	3.13E+02	1.25E+04
VOC	2.37E+03	6.08E+01	2.43E+03
$PM_{10/2.5}$	3.01E+03	1.79E+04	2.09E+04
SO_2	4.74E+03	1.22E+02	4.87E+03

Source No. 3002, Ladle Heater
Max. Annual throughput = 105,120 therms

Pollutants	Unabated Emissions Factors (lb/therm)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	1.03E+03	1.03E+03
CO	0.00E+00	8.66E+02	8.66E+02
VOC	0.00E+00	5.67E+01	5.67E+01
$PM_{10/2.5}$	0.00E+00	7.83E+01	7.83E+01
SO_2	0.00E+00	6.18E+00	6.18E+00

Source No. 3004, Casting Mold Shake Out Station abated by A-3003
Source No. 3019, Casting Mold Shake Out Station abated by A-3003
Max. Annual throughput = 6,950 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.18E+00	99.00%	90.50%
CO	6.00E+00	99.00%	0.00%
$PM_{10/2.5}$	1.8E-02	99.00%	65.00%
Condensable $PM_{10/2.5}$	1.09E-02	99.00%	65.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	5.35E+03	5.69E+02	5.92E+03
CO	4.13E+04	4.17E+02	4.17E+04
$PM_{10/2.5}$	4.34E+01	1.25E+00	4.46E+01
Condensable $PM_{10/2.5}$	2.61E+01	7.54E-01	2.69E+01

Source No. 3004, Casting Mold Shake Out Station abated by A-3003
Source No. 3019, Casting Mold Shake Out Station abated by A-3003
Max. Annual throughput = 37,800 tons sand combined

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	4.48E-02	99.00%	65.00%
Condensable $PM_{10/2.5}$	3.49E-02	99.00%	65.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	5.87E+02	1.69E+01	6.04E+02
Condensable $PM_{10/2.5}$	4.57E+02	1.32E+01	4.71E+02

Source No. 3005, Blast Table
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.30E-02	100.00%	99.57%
$PM_{2.5}$	3.30E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.72E+00	0.00E+00	1.72E+00
$PM_{2.5}$	1.72E-01	0.00E+00	1.72E-01

Source No. 3006 Tumble Blast
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
PM_{10}	3.30E-02	100.00%	99.57%
$PM_{2.5}$	3.30E-03	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
PM_{10}	1.72E+00	0.00E+00	1.72E+00
$PM_{2.5}$	1.72E-01	0.00E+00	1.72E-01

Source No. 3007, New Sand Silo #1 abated by A-3004
Max. Annual throughput = 3,366 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.82E+00	0.00E+00	7.82E+00

Source No. 3009, Sand Cooler Classifier abated by A-3004
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3010, Sand Conditioning Unit #1 abated by A-3004
Max. Annual throughput = 18,900 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.39E+01	0.00E+00	4.39E+01

Source No. 3011 Sand Conditioning Unit #2 abated by A-3004
Max. Annual throughput = 18,900 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	4.39E+01	0.00E+00	4.39E+01

Source No. 3012 Return Sand Bin #1 abated by A-3004
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3013 Reclaimed Sand Bin #2 abated by A-3004
Max. Annual throughput = 34,020 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.90E+01	0.00E+00	7.90E+01

Source No. 3014 Sand Mixer w/Techniset F6000/17712/17717 Binder abated by A-3003 and A-3007
Source No. 3018, Mold Coating Operation abated by A-3003 and A-3007
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
VOC	8.50E-02	75.00%	90.50%
$PM_{10/2.5}$	6.00E-03	75.00%	99.85%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	2.29E+02	8.03E+02	1.03E+03
$PM_{10/2.5}$	2.55E-01	5.67E+01	5.70E+01

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Source No. 3015 New Sand Receiving Bucket Elevator #1

Max. Annual throughput = 3,366 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.82E+00	0.00E+00	7.82E+00

Source No. 3016 Bucket Elevator #2 Returned Sand
Max. Annual throughput = 37,800 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	8.78E+01	0.00E+00	8.78E+01

Source No. 3017 Bucket Elevator #3 Reclaimed Sand
Max. Annual throughput = 34,020 tons sand

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	5.40E-01	100.00%	99.57%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	7.90E+01	0.00E+00	7.90E+01

Source No. 3018, Mold Coating Operation abated by A-3003 and A-3007
Max. Annual throughput = 1,200 gallons

Pollutants	Unabated Emissions Factors (lb/gal)	Capture Efficiency Required	Control Efficiency Required
VOC	3.69E+00	75.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	3.15E+02	1.11E+03	1.42E+03

Source No. 3020 Holcote 578 CCD
Max. Annual throughput = 1,200 gallons mold coating

Pollutants	Unabated Emissions Factors (lb/gal)	Capture Efficiency Required	Control Efficiency Required
VOC	1.00E-01	75.00%	90.50%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
VOC	8.55E+00	3.00E+01	3.86E+01

Exempt Source: Heat Treat Furnaces
Max. Annual throughput = 102,664 therms

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
NO_X	9.80E-03	0.00%	0.00%
CO	8.24E-03	0.00%	0.00%
VOC	5.39E-04	0.00%	0.00%
$PM_{10/2.5}$	7.45E-04	0.00%	0.00%
SO_2	5.88E-05	0.00%	0.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
NO_X	0.00E+00	1.01E+03	1.01E+03
CO	0.00E+00	8.45E+02	8.45E+02
VOC	0.00E+00	5.54E+01	5.54E+01
$PM_{10/2.5}$	0.00E+00	7.65E+01	7.65E+01
SO_2	0.00E+00	6.04E+00	6.04E+00

Exempt Source: Finishing Room cleaning and grinding
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.70E+00	90.00%	50.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	9.29E+03	2.07E+03	1.14E+04

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Exempt Source: Finishing Room Arc Air Booth/Welding
Max. Annual throughput = 12,150 tons steel

Pollutants	Unabated Emissions Factors (lb/ton)	Capture Efficiency Required	Control Efficiency Required
$PM_{10/2.5}$	1.00E-03	100.00%	50.00%

Pollutants	Captured and/or abated emissions (lb/yr)	Fugitive Emissions (lb/yr)	Total Emissions (lb/yr)
$PM_{10/2.5}$	6.08E+00	0.00E+00	6.08E+00

Emissions from stacks/baghouses:

Baghouse A-3001, Abating S-3001

Required Emissions Limits: 0.0014 gr/dscf
Maximum Flow Rate: 41,768 dscfm
Operation Hour: 6000 hours/year

Baghouses A-3002 and A-3006, Abating: S-3005 and S-3006
Required Emissions Limits: 0.0013 gr/dscf
Maximum Flow Rate: 56,362 dscfm
Maximum Operation Hour: 7200 hours/year

Baghouses A-3003 and A-3007, Abating: S-3004, S-3014, S-3018, and S-3019
Required Emissions Limits: 0.0013 gr/dscf
Maximum Flow Rate: 9,618 dscfm
Maximum Operation Hour: 8760 hours/year

Baghouse A-3004, Abating: S-3007, S-3008, S-3009, S-3010, S-3011, S-3012, S-3013, S-3014, S-3015, S-3016, and S-3017
Required Emissions Limits: 0.01 gr/dscf
Maximum Flow Rate: 11,062 dscfm
Maximum Operation Hour: 7200 hours/year

Recommendation

Issue revised Synthetic Minor Operating Permit to the Pacific Steel Casting.

Nicholas C. Maiden, P.E. Date
Senior Air Quality Engineer

APPENDIX

APPENDIX A
Detailed Emission Calculations
(CONFIDENTIAL)