

STANDARD
AIR CONTAMINANT DISCHARGE PERMIT

Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, #400
Portland, Oregon 97201
(503) 229-5554

This permit is being issued in accordance with the provisions of ORS 468A.040 and based on the land use compatibility findings included in the permit record.

ISSUED TO:

PCC Structural, Inc.
4600 SE Harney Drive
Portland, OR 97206-0898

INFORMATION RELIED UPON:

Application No.: 022206
Date Received: 04/30/2007

PLANT SITE LOCATION:

SSBO
13340 SE 84th Ave.
Clackamas, OR 97015

LAND USE COMPATIBILITY FINDING:

Approving Authority: Clackamas County
Approval Date: 09/15/1995

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

Ed Druback

Ed Druback, Northwest Region Air Quality Manager

SEP 7 2007

Dated

Source(s) Permitted to Discharge Air Contaminants (OAR 340-216-0020):

Table 1 Code	Source Description	SIC
Part B, 50.	Non-ferrous metal foundries 100 or more tons/yr of metal charged	3369

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1.0 GENERAL EMISSION STANDARDS AND LIMITS

- 1.1. Visible Emissions** The permittee must comply with the following visible emission limits, as applicable:
- a. Emissions from any fuel burning equipment air contaminant source must not exceed an opacity equal to or greater than 20% for a period aggregating more than 3 minutes in any one hour.
 - b. Emissions from any air contaminant source other than fuel burning equipment must not exceed an opacity equal to or greater than 20% for a period aggregating more than 30 seconds in any one hour.
- 1.2. Particulate Matter Emissions** The permittee must comply with the following particulate matter emission limits, as applicable:
- a. Particulate matter emissions from any fuel burning equipment must not exceed 0.1 grains per standard cubic foot, corrected to 12% CO₂ or 50% excess air.
 - b. Particulate matter emissions from any non-fuel burning equipment air contaminant source must not exceed 0.1 grains per standard cubic foot.
- 1.3. Fugitive Emissions** The permittee must take reasonable precautions to prevent fugitive dust emissions by:
- a. Treating vehicular traffic areas of the plant site under the control of the permittee.
 - b. Operating all air contaminant-generating processes so that fugitive type dust associated with the operation will be adequately controlled at all times.
 - c. Storing collected materials from air pollution control equipment in a covered container or other method equally effective in preventing the material from becoming airborne during storage and transfer.
- 1.4. Particulate Matter Fallout** The permittee must not cause or permit the emission of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. The Department will verify that the deposition exists and will notify the permittee that the deposition must be controlled.
- 1.5. Nuisance and Odors** The permittee must not cause or allow air contaminants from any source to cause a nuisance. Nuisance conditions will be verified by Department personnel.

- 1.6. Fuels and Fuel Sulfur Content** The permittee must not use any fuel other than natural gas, propane, butane, ASTM grade fuel oils, or on-specification used oil.
- a. Fuel oils must not contain more than:
 - i. 0.3% sulfur by weight for ASTM Grade 1 distillate oil;
 - ii. 0.5% sulfur by weight for ASTM Grade 2 distillate oil;
 - b. The permittee is allowed to use on-specification used oil as fuel which contains no more than 0.5% sulfur by weight. The permittee must obtain analyses from the marketer or, if generated on site, have the used oil analyzed, so that it can be demonstrated that each shipment of oil does not exceed the used oil specifications contained in 40 CFR Part 279.11, Table 1.

2.0 SPECIFIC PERFORMANCE AND EMISSION STANDARDS

- 2.1. Source Specific Particulate Emission Limitation** Particulate matter emissions for the de-wax autoclave must not exceed 0.02 gr/dscf.
- 2.2. Emission Action Level - Visible Emissions** The permittee must immediately investigate and commence corrective action measures for any instance of observed visible emissions to ambient air (excluding uncombined water vapor), from any baghouse, wax filtered exhaust, heat treat condensation filtration device, autoclave weir system, or their associated exhaust ductwork.
- 2.3. Baghouse Operation And Maintenance** The permittee must observe the following baghouse operation and maintenance requirements:
- a. The permittee must post the operating differential pressure design specification on each respective fabric filter baghouse at the facility.
 - b. The permittee must investigate and commence corrective action measures within 24 hours of an observed excursion of the designed differential pressure range of any fabric filter baghouse.

- c. When replacing fabric filter bags in any baghouse, the permittee may not substitute a bag with lower control efficiency specifications than 99%.
- 2.4. Thermal Oxidizer Operating Temperature - General** All process thermal oxidizers must be maintained at a minimum operating temperature of 1400° F for at least a 0.5 second retention time unless an alternate operating temperature and/or time parameter has been demonstrated and approved by the Department as being equal or more effective.
- 2.5. Investing Room Emission Control** The combined emission capture efficiency/thermal oxidizer destruction efficiency for the investing room and its thermal oxidizer emission control device must be operated and maintained such that a minimum VOC destruction efficiency of 97% is achieved.
- Note: Capture efficiency is presumed to be 100% based upon previous test results demonstrating total enclosure.
- 2.6. Investing Room Thermal Oxidizer Operating Temperature** The operating temperature of the investing room thermal oxidizer must be maintained at no less than 50°F below the average operating temperature recorded during the most recent valid source test based on a one hour average. If, based upon a one hour average, the operating temperature drops to less than 50°F below the average operating temperature established during the most recent valid source test, the permittee must take expeditious action to return the temperature to the established operating range. The temperature falling below this emission action level is not a violation of this permit condition, however, it is a violation of this permit condition if the permittee fails to expeditiously take action to correct the operating temperature after its fallen below the range.
- 2.7. Investing Room Emission Capture Efficiency** The permittee must notify the Department prior to making any change to the Investing Room, its air inflow, or its emission exhaust system which may affect its emission capture efficiency. If capture efficiency is required to be verified by the Department, the permittee will do so by performing a test for total enclosure using the test method previously approved and on file at the Department.
- 2.8. FlashFire Furnace Operating Temperature** The operating temperature of the FlashFire Furnace thermal oxidizer must be maintained at no less than 50°F below the average operating temperature recorded during the most recent valid source test based on a one hour average. If, based upon a one hour average, the operating temperature drops to less than 50°F below the average operating temperature established during the most recent valid source test, the permittee must take

expeditious action to return the temperature to the established operating range. The temperature falling below this emission action level is not a violation of this permit condition, however, it is a violation of this permit condition if the permittee fails to expeditiously take action to correct the operating temperature after its fallen below the range.

- 2.9. FlashFire Furnace Thermal Oxidizer Destruction Efficiency** The FlashFire furnace thermal oxidizer must be operated and maintained such that:
- a. VOC emissions from the furnace and its thermal oxidizer must not exceed 4.2 lbs/hr; **OR**
 - b. the furnace and its thermal oxidizer achieve a minimum VOC destruction efficiency of 95%.

3.0 PLANT SITE EMISSION LIMITS

- 3.1. Plant Site Emission Limits (PSEL)** Plant site emissions must not exceed the following:

Pollutant	Limit	Units
PM	24	tons per year
PM ₁₀	14	tons per year
NO _x	39	tons per year
CO	99	tons per year
VOC	39	tons per year
Single HAP	9	tons per year
Combined HAPs	24	tons per year

- 3.2. Emission Limitation Period** The plant site emission limits apply to any 12-consecutive calendar month period.

4.0 COMPLIANCE DEMONSTRATION

- 4.1. PSEL Compliance Monitoring** Compliance with the PSEL is determined for each 12-consecutive calendar month period based on the following calculation, performed for each pollutant:

$$E_{n-12Mo} = \sum [(P_{n-12Mo} \times E_{fn}) + MB_n] \times K$$

Where:

E_{n-12Mo} = pollutant emission in tons/yr for the respective 12-month period.

n = the criteria or hazardous air pollutant of concern.

P_{n-12Mo} = monitoring parameter identified for each process in Condition 10.0 for the respective 12-month period.

E_{fn} = emission factor identified for each respective process/monitoring parameter and pollutant in Condition 10.0.

K = conversion constant (1 ton/2000 lbs)

MB_n = emission rate mass balance (criteria pollutant or HAP, as applicable), determined as follows:

$$MB_n = \sum [(U_n \times D_n \times C_n) - W] \times [1 - (CE \times DE^*)]$$

Where:

MB = 12-month pollutant emission in pounds by mass balance calculation

U = Material usage for the period in gallons

D = Material density in pounds per gallon

C = pollutant concentration expressed as a decimal

n = represents the criteria or hazardous air pollutant of concern

CE = pollutant capture efficiency expressed as a decimal (CE presumed to be 1.00, see review report)

DE = Destruction efficiency (per most recent source test)

W = Weight of pollutant shipped offsite

* - DE equals 0 at times of control device bypass/shutdown

4.2. Emission Factors

The permittee must use the default emission factors provided in condition 10.0 for calculating pollutant emissions, unless alternative emission factors are approved by the Department. The permittee may request or the Department may require using alternative emission factors provided they are based on actual test data or other documentation (e.g., AP-42 compilation of emission factors) that has been reviewed and approved by the Department.

4.3. Source Testing Requirements

Within 18 months from the issue date of this permit, the permittee must perform a source test of each of the following emission units. Source testing is not required for a referenced emission unit if a valid source test was performed within 6 months prior to the issuance date of this permit.

- Cleaning Baghouse
 - Investing Room thermal oxidizer
 - FlashFire thermal oxidizer
-
- a. Cleaning Baghouse - demonstrate the baghouse is capable of operating at its maximum normal operating capacity in compliance with Condition 1.2 by conducting a source test for particulate emissions using Oregon Method 5. During the source test the following parameters must be monitored unless otherwise approved in the pretest plan:
 - i. Identification of bag manufacturer, bag model number and bag performance design parameters for the bags used in the baghouse. If bags are from more than one manufacturer, supply the information for the bags most recently used as replacements;
 - ii. exhaust gas flow rates;
 - iii. pressure drop across baghouse;
 - iv. production or level of operation for baghouse.
 - b. Investing Room thermal oxidizer - demonstrate the thermal oxidizer is capable of operating at its maximum normal operating capacity in compliance with Condition 2.5 by conducting a source test demonstrating VOC emission rate (lbs/hr) and destruction efficiency (%DE) using EPA Method 25A. During the source test the following parameters must be monitored unless otherwise approved in the pretest plan:
 - i. Operating temperature of the thermal oxidizer;
 - ii. exhaust gas flow rates at inlet and outlet;
 - iii. hydrocarbon composition of VOC liquids used in the Investing Room;
 - iv. Investing Room production (molds in process/produced);

- v. VOC concentration at the inlet and outlet of the thermal oxidizer measured as propane
- c. FlashFire thermal oxidizer - demonstrate the thermal oxidizer is capable of operating at its maximum normal operating capacity in compliance with Condition 2.9 by conducting a source test demonstrating VOC emission rate (lbs/hr) using EPA Method 25A. During the source test the following parameters must be monitored unless otherwise approved in the pretest plan:
 - i. Operating temperature of the thermal oxidizer;
 - ii. exhaust gas flow rate;
 - iii. FlashFire production rate (number of cores processed);
 - iv. VOC emission rate (lbs/hr) at the outlet of the thermal oxidizer measured as propane.
- d. The following parameters must be monitored and recorded during each source test:
 - i. Visible emissions as measured by EPA Method 9 for a period of at least six minutes during or within 30 minutes before or after each test run;
 - ii. other process/pollution control device operating parameters not identified above that is determined to be needed by the Department and/or the permittee;
- e. All tests must be conducted in accordance with the Department's Source Sampling Manual and the approved pretest plan. The pretest plan must be submitted at least 15 days in advance and approved by the Regional Source Test Coordinator. Test data and results must be submitted for review to the Regional Source Test Coordinator within 45 days unless otherwise approved in the pretest plan.
- f. Only regular operating staff may adjust the combustion system or production processes and emission control parameters during the source test and within two hours prior to the source test. Any operating adjustments made during the source test, which are a result of consultation with source testing personnel, equipment vendors or consultants, may render the source test invalid.

5.0 MONITORING/RECORDKEEPING REQUIREMENTS

- 5.1. **Continuous Monitoring** The permittee must continuously monitor and maintain records of the temperature in the combustion zones of the Investing Room and FlashFire Furnace thermal oxidizers during all hours of operation.
- 5.2. **Baghouse Design Specification Records** The permittee must keep readily accessible records documenting the engineering design specifications for all baghouses at the facility. These records must be kept for the life of each control device.
- 5.3. **Baghouse Replacement Bag Records** The permittee must keep readily accessible records documenting the design/performance specifications for all replacement fabric filter bags for use in baghouse control devices at the facility. This condition is applicable to replacement bags that are installed on or after July 1, 2002.
- 5.4. **Weekly Monitoring** The permittee must monitor and record the differential operating pressure across each fabric filter baghouse control device at least once each calendar week that the plant is operating. The permittee must investigate and commence corrective action measures within 24 hours of an observed excursion of the designed differential pressure range of any fabric filter baghouse.

An excursion of design differential pressure range is not a violation of this permit condition, however, it is a violation of this permit condition if the permittee fails to perform the required monitoring or fails to commence the required corrective action measures within 24 hours of an observed excursion.

- 5.5. **Monthly Monitoring** The permittee must monitor and maintain the following records related to the operation and maintenance of the plant and associated air contaminant control devices monthly:
- a. The permittee must monitor each baghouse, wax filtered exhaust, heat treat condensation filtration device, autoclave weir system, and their associated exhaust ductwork for visible emissions at least monthly. If visible emissions are observed, the permittee must document the location, cause, and corrective action taken pursuant to the emission action level of Condition 2.2.
 - b. Quantity of natural gas combusted as reported monthly by gas company invoice (ft³/month).
 - c. The type and quantity of any fuels other than natural gas or propane combusted.

- d. Cumulative flow/hours of operation of the autoclave (shell de-wax).
- e. Quantity of metal cast (tons).
- f. Quantity of metal vacuum cast (tons).
- g. Quantity of metal air cast (tons).
- h. Quantity of each individual-HAP metal cast (tons).
- i. Quantity of each individual-HAP metal vacuum cast (tons).
- j. Quantity of each individual-HAP metal air cast (tons).
- k. Quantity of combined-HAP metal cast (tons).
- l. Quantity of combined-HAP metal vacuum cast (tons).
- m. Quantity of combined-HAP metal air cast (tons).
- n. Quantity of metal poured using filled wax (tons).
- o. Quantity baghouse dust collected (tons).
- p. Quantity of plastic used (tons) in the FlashFire process.
- q. Quantity of latex used (tons).
- r. The quantity and type of VOC and HAP used by weight.
- s. The quantity of non-emitted VOC waste collected. The quantity may be monitored by: % of initial VOCs in product; using information on the waste profile; analyzing for VOC content; or an equivalent method of determination approved by the Department. If analyzed for VOC content, analysis must be based upon a test method approved by the Department.

Note: This monitoring is only required when parameter "W" is used to calculate VOC or organic HAP emissions for purpose of determining compliance with permitted emission limit(s).

- t. Using the compliance calculation procedures from Condition 4.1, perform a calculation of emissions to demonstrate compliance with the rolling 12-month PSEL limitations of Condition 3.1.

5.6. Pollutant Capture Efficiency

The permittee must re-evaluate pollutant capture efficiency as follows:

- a. On any occurrence of an equipment modification or addition to the Investing Room, its exhaust system or its thermal oxidizer that could potentially affect the demonstrated capture efficiency used for compliance emission calculations in condition 4.1.
 - b. On any occurrence of an equipment modification to the FlashFire process/thermal oxidizer that could potentially affect the assumed capture efficiency used for compliance emission calculations in condition 4.1.
- 5.7. **Used Oil Monitoring** If used oil is combusted, the permittee must obtain analyses from the marketer or, if generated on site, have the used oil analyzed, so it can demonstrate that each shipment of oil received does not exceed the used oil specifications contained in 40 CFR Part 279.11, Table 1.
- 5.8. **Excess Emissions** The permittee must maintain records of excess emissions as defined in OAR 340-214-0300 through 340-214-0340 (recorded on occurrence). Typically, excess emissions are caused by process upsets, startups, shutdowns, or scheduled maintenance. In many cases, excess emissions are evident when visible emissions are greater than 20% opacity for 3 minutes or more in any 60-minute period.
- 5.9. **Complaint Log** The permittee must maintain a log of all written complaints and complaints received via telephone that specifically refer to air pollution concerns associated to the permitted facility. The log must include a record of the permittee's actions to investigate the validity of each complaint and a record of actions taken for complaint resolution.
- 5.10. **Retention of Records** Unless otherwise specified, all records must be maintained on site for a period of two (2) years and made available to the Department upon request.

6.0 REPORTING REQUIREMENTS

- 6.1. **Excess Emissions** The permittee must notify the Department by telephone or in person of any excess emissions which are of a nature that could endanger public health.
 - a. Such notice must be provided as soon as possible, but never more than one hour after becoming aware of the problem. Notice must be made to the regional office identified in Condition 7.5.

- b. If the excess emissions occur during non-business hours, the permittee must notify the Department by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.
- c. The permittee must also submit follow-up reports when required by the Department.

6.2. Annual Report

The permittee must submit to the Department by **February 15** of each year this permit is in effect two (2) copies of the following information for the previous calendar year:

- a. A letter stating the facility's compliance status with permit conditions for the calendar year. Any violations or exceedances must be explained in detail including corrective actions taken.
- b. Operating parameters:
 - i. Quantity of natural gas combusted (ft³).
 - ii. The type and quantity of any fuels other than natural gas or propane combusted.
 - iii. Quantity of metal cast (tons).
 - iv. Quantity of metal air cast (tons).
 - v. Quantity of individual-HAP metal cast (tons) for the individual HAP metal of highest usage.
 - vi. Quantity of individual-HAP metal air cast (tons) for the individual HAP metal of highest usage.
 - vii. Quantity of combined-HAP metal cast (tons).
 - viii. Quantity of combined-HAP metal air cast (tons).
 - ix. Quantity of metal poured using filled wax (tons).
 - x. Quantity baghouse dust collected (tons).
 - xi. The quantity of VOC used.
 - xii. Revisions of the pollutant capture efficiency function used for compliance emission calculations in Condition 4.1.
 - xiii. The quantity of VOC/HAP waste collected (if used in calculating emissions).

- xiv. The calculated PM, PM₁₀, CO, NO_x, VOC, combined HAPs and highest individual HAP 12-month rolling emission rates for each month of the previous calendar year. Emissions must be calculated using the formulae in Condition 4.1 and emission factors in Condition 10.0.
 - c. Records of all planned and unplanned excess emissions events.
 - d. Summary of complaints relating to air quality received by permittee during the year.
 - e. List permanent changes made in plant process, production levels, and pollution control equipment which affected air contaminant emissions.
 - f. List major maintenance performed on pollution control equipment.
- 6.3. Notice of Change of Ownership or Company Name**
- The permittee must notify the Department in writing using a Departmental "Permit Application Form" within 60 days after the following:
- a. Legal change of the name of the company as registered with the Corporations Division of the State of Oregon; or
 - b. Sale or exchange of the activity or facility.
- 6.4. Construction or Modification Notices**
- The permittee must notify the Department in writing using a Departmental "Notice of Construction Form," or "Permit Application Form," and obtain approval in accordance with OAR 340-210-0205 through 340-210-0250 before:
- a. Constructing, installing, or establishing a new stationary source that will cause an increase in any regulated pollutant emissions;
 - b. Making any physical change or change in operation of an existing stationary source that will cause an increase, on an hourly basis at full production, in any regulated pollutant emissions; or
 - c. Constructing or modifying any air pollution control equipment.
- 6.5. Where to Send Reports and Notices**
- The reports, with the permit number prominently displayed, must be sent to the Permit Coordinator for the region where the source is located as identified in Condition 7.3.

7.0 ADMINISTRATIVE REQUIREMENTS

- 7.1. **Permit Renewal Application** The completed application package for renewal of this permit is due on 05/01/2012. Two (2) copies of the application must be submitted to the DEQ Permit Coordinator as listed in Condition 7.3.
- 7.2. **Permit Modifications** Application for a modification of this permit must be submitted not less than **60** days prior to the source modification. A special activity fee must be submitted with an application for the permit modification. The fees and two (2) copies of the application must be submitted to the Business Office of the Department.
- 7.3. **Permit Coordinator Address** All reports, notices, and applications (without associated fees) should be directed to the Permit Coordinator of the Department's Northwest Regional Office. The address is as follows:

Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5582
- 7.4. **Department Contacts - Internet** Information about air quality permits and the Department's regulations may be obtained from the DEQ web page at www.deq.state.or.us.
- 7.5. **Department Contacts - General** All inquiries about this permit should be directed to the Department's Northwest Regional Office. The address and phone number are as follows:

Department of Environmental Quality
Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5554

8.0 FEES

- 8.1. **Annual Compliance Fee** The Annual Fee specified in OAR 340-216-0020, Table 2, Part 2 for a Standard ACDP is due on **December 1** of each year this permit is in effect. An invoice indicating the amount, as determined by Department regulations, will be mailed prior to the above date.
- 8.2. **Change of Ownership or** The non-technical permit modification fee specified in OAR 340-216-0020, Table 2, Part 3(a) is due with an application for

- Company Name Fee** changing the ownership or the name of the company.
- 8.3. Special Activity Fees** The special activity fees specified in OAR 340-216-0020, Table 2, Part 3.(b through i) are due with an application to modify the permit.
- 8.4. Where to Submit Fees** Fees must be submitted to:
Department of Environmental Quality
Business Office
811 SW Sixth Avenue
Portland, Oregon 97204-1390

9.0 GENERAL CONDITIONS AND DISCLAIMERS

- 9.1. Permitted Activities** This permit allows the permittee to discharge air contaminants from processes and activities related to the air contaminant source(s) listed on the first page of this permit until this permit expires, is modified, or is revoked.
- 9.2. Other Regulations** In addition to the specific requirements listed in this permit, the permittee must comply with all other legal requirements enforceable by the Department.
- 9.3. Conflicting Conditions** In any instance in which there is an apparent conflict relative to conditions in this permit, the most stringent conditions apply.
- 9.4. Masking of Emissions** The permittee must not cause or permit the installation of any device or use any means designed to mask the emissions of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement.
- 9.5. Department Access** The permittee must allow the Department's representatives access to the plant site and pertinent records at all reasonable times for the purposes of performing inspections, surveys, collecting samples, obtaining data, reviewing and copying air contaminant emissions discharge records and conducting all necessary functions related to this permit in accordance with ORS 468-095.
- 9.6. Permit Availability** The permittee must have a copy of the permit available at the facility at all times.
- 9.7. Open Burning** The permittee may not conduct any open burning except as allowed by OAR 340 Division 264.
- 9.8. Asbestos** The permittee must comply with the asbestos abatement requirements in OAR 340, Division 248 for all activities involving

asbestos-containing materials, including, but not limit to, demolition, renovation, repair, construction, and maintenance.

9.9. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

9.10. Termination, Revocation, or Modification

The Department may modify or revoke this permit pursuant to OAR 340-216-0082 and 340-216-0084.

10.0 EMISSION FACTORS

Process	Pollutant	Monitoring Parameter (Pn)	Emissions Factor (Efn)	Emissions Factor Units	Reference
Natural Gas Fired Equipment	PM	MM ft ³ of natural gas	2.5	lbs/MM ft ³	DEQ
	PM ₁₀	MM ft ³ of natural gas	2.5	lbs/MM ft ³	DEQ
	NO _x uncontrolled	MM ft ³ of natural gas	100	lbs/MM ft ³	AP-42
	CO	MM ft ³ of natural gas	84	lbs/MM ft ³	AP-42
	VOC	MM ft ³ of natural gas	5.5	lbs/MM ft ³	AP-42
Air Casting	PM	tons of metal poured	4.8	lbs/ton	AP-42
	PM ₁₀	tons of metal poured	2.4	lbs/ton	AP-42 - 50% of PM estimate
	PM HAP	tons of metal poured, % HAP	4.8	lbs/ton	AP-42
	Total HAP	tons of metal poured, % HAP	4.8	lbs/ton	AP-42
Vacuum Casting,	PM	tons of metal poured	0.21	lbs/ton	AP-42
	PM ₁₀	tons of metal poured	0.21	lbs/ton	AP-42
	PM HAP	tons of metal poured, % HAP	0.21	lbs/ton	AP-42
	Total HAP	tons of metal poured, %HAP	0.21	lbs/ton	AP-42
Baghouses	PM	tons baghouse dust collected	20	lbs/ton	Bag Mfr. Spec.
	PM ₁₀	tons baghouse dust collected	20	lbs/ton	Bag Mfr. Spec.
	PM HAP	tons baghouse dust collected, %HAP	20	lbs/ton	Bag Mfr. Spec.
	Total HAP	tons baghouse dust collected, %HAP	20	lbs/ton	Bag Mfr. Spec.
Wax Burnout	PM	tons of metal poured	0.027	lbs/ton	Source EF
	PM ₁₀	tons of metal poured	0.027	lbs/ton	Source EF
	VOC	tons of metal poured	3.43	lbs/ton	Source EF
	VOC HAP	tons of metal poured using filled wax	2.57	lbs/ton	Source EF

Process	Pollutant	Monitoring Parameter (Pn)	Emissions Factor (Efn)	Emissions-Factor Units	Reference
	Total HAP	tons of metal poured using filled wax	2.57	lbs/ton	Source EF
Autoclave	PM	exhaust flow rate (acfm)	2.86	lbs/10 ⁶ acfm	Source Test
	PM10	exhaust flow rate (acfm)	1.43	lbs/10 ⁶ acfm	50% of PM Source Test est.
	VOC	tons of metal poured using filled wax	2.86	lbs/ton	Source EF
	VOC HAP	tons of metal poured using filled wax	0.43	lbs/ton	Source EF
	Total HAP	tons of metal poured using filled wax	0.43	lbs/ton	Source EF
Wax Filtered Exhaust	PM	tons of metal poured	0.031	lbs/ton	Source EF
	PM10	tons of metal poured	0.016	lbs/ton	Source EF
HT Condensation Filtration Device	PM	tons of metal poured	0.031	lbs/ton	Source EF
	PM10	tons of metal poured	0.016	lbs/ton	Source EF
	PM HAP	tons of metal poured, % HAP	0.031	lbs/ton	Source EF
	Total HAP	tons of metal poured, % HAP	0.031	lbs/ton	Source EF
Cleaning Air Arc	PM	tons of metal poured	0.125	lbs/ton	Source EF
	PM10	tons of metal poured	0.06	lbs/ton	Source EF
	PM HAP	tons of metal poured, %HAP	0.125	lbs/ton	Source EF
	Total HAP	tons of metal poured, %HAP	0.125	lbs/ton	Source EF
FlashFire	PM	tons of plastic used	6.2	lbs/ton	Source Test
	PM10	tons of plastic used	6.2	lbs/ton	Source Test
	VOC	tons of plastic used	100	lbs/ton	Source Test
	VOC HAP	tons of plastic used	100	lbs/ton	Source Test
	Total HAP	tons of plastic used	100	lbs/ton	Source Test
Fugitive	PM	tons of metal poured	0.7	lbs/ton	Source EF
	PM10	tons of metal poured	0.35	lbs/ton	Source EF
	PM HAP	tons of metal poured, %HAP	0.7	lbs/ton	Source EF
	Total HAP	tons of metal poured, %HAP	0.7	lbs/ton	Source EF
Misc. VOC Use	VOC	tons of VOC and VOC-HAP containing material usage	2000	lbs/ton	Material Balance
	VOC HAP	tons of VOC and VOC-HAP containing material usage	2000	lbs/ton	Material Balance
	Total HAP	tons of VOC and VOC-HAP containing material usage	2000	lbs/ton	Material Balance
Latex	VOC	tons latex used	800	lbs/ton	Source EF
	VOC HAP	tons latex used	800	lbs/ton	Source EF
	Total HAP	tons latex used	800	lbs/ton	Source EF

11.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit	NSR	New Source Review
ASTM	American Society for Testing and Materials	O ₂	oxygen
AQMA	Air Quality Maintenance Area	OAR	Oregon Administrative Rules
calendar year	The 12-month period beginning January 1st and ending December 31st	ORS	Oregon Revised Statutes
CFR	Code of Federal Regulations	O&M	operation and maintenance
CO	carbon monoxide	Pb	lead
DEQ	Oregon Department of Environmental Quality	PCD	pollution control device
dscf	dry standard cubic foot	PM	particulate matter
EPA	US Environmental Protection Agency	PM ₁₀	particulate matter less than 10 microns in size
FCAA	Federal Clean Air Act	ppm	part per million
gal	gallon(s)	PSD	Prevention of Significant Deterioration
gr/dscf	grains per dry standard cubic foot	PSEL	Plant Site Emission Limit
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040	PTE	Potential to Emit
I&M	inspection and maintenance	RACT	Reasonably Available Control Technology
lb	pound(s)	scf	standard cubic foot
MMBtu	million British thermal units	SER	Significant Emission Rate
NA	not applicable	SIC	Standard Industrial Code
NESHAP	National Emissions Standards for Hazardous Air Pollutants	SIP	State Implementation Plan
NO _x	nitrogen oxides	SO ₂	sulfur dioxide
NSPS	New Source Performance Standard	Special Control Area	as defined in OAR 340-204-0070
		VE	visible emissions
		VOC	volatile organic compound
		year	A period consisting of any 12-consecutive calendar months