

**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.: 022246  
Date Received: 06/04/2007

**PLANT SITE LOCATION:**

4600 SE Harney Drive  
Portland, OR

**LAND USE COMPATIBILITY FINDING:**

Approving Authority: City of Portland  
Approval Date: 05/12/1995

**ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY**

  
Ed Druback, Northwest Region Air Quality Manager

OCT 23 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

## TABLE OF CONTENTS

1.0	GENERAL EMISSION STANDARDS AND LIMITS .....	3
2.0	SPECIFIC PERFORMANCE AND EMISSION STANDARDS .....	4
3.0	PLANT SITE EMISSION LIMITS .....	6
4.0	COMPLIANCE DEMONSTRATION .....	6
5.0	MONITORING/RECORDKEEPING REQUIREMENTS .....	11
6.0	REPORTING REQUIREMENTS .....	14
7.0	ADMINISTRATIVE REQUIREMENTS .....	17
8.0	FEES .....	17
9.0	GENERAL CONDITIONS AND DISCLAIMERS .....	18
10.0	EMISSION FACTORS.....	19
11.0	ABBREVIATIONS, ACRONYMS, AND DEFINITIONS .....	21

## 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 equal or exceed 20% opacity for a period aggregating more than 3 minutes in any one hour.
  - b. Emissions from any air contaminant source installed, constructed, or modified after June 1, 1970 must not equal or exceed 20% opacity for a period aggregating more than 3 minutes in any one hour.
  - c. Emissions from any air contaminant source other than fuel burning equipment must not equal or exceed 20% opacity 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 burning equipment must not exceed 0.1 grains per standard cubic foot, corrected to 12% CO<sub>2</sub> or 50% excess air.
  - b. Particulate matter emissions from any air contaminant source, other than fuel burning equipment, 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. 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, the maintenance shop cyclone, the LPC-T cleaning cyclone, or their associated exhaust ductwork.
- 2.2. Baghouse Operation and Maintenance** The permittee must observe the following baghouse operation and maintenance requirements.
- a. Each baghouse must achieve a minimum particulate matter removal efficiency of 99%.
  - b. The permittee must post the operating differential pressure design specification on each respective fabric filter baghouse at the facility.
  - c. 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.
  - d. When replacing fabric filter bags in any baghouse, the permittee may not substitute a bag with lower control

efficiency specifications than 99%.

- 2.3. Thermal Oxidizer Operating Temperature – General** All process thermal oxidizers must be maintained at a minimum operating temperature of 1400 degrees 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.
- 2.4. Thermal Oxidizer Operating Temperature – Emission Action Level** The operating temperatures of the LPC-T catalytic oxidizer and LPC-S thermal oxidizer must be maintained at no more than 50 degrees 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 of either unit drops to more than 50 degrees 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 it has fallen below the range.
- 2.5. Source Specific Reasonably Available Control Technology (RACT) Requirements** The permittee must comply with the following source specific RACT requirements:
- a. The permittee must operate and maintain controls to reduce the VOC emissions from the Large Parts Campus Steel and Titanium (LPC-S and LPC-T) investment casting operations by a minimum of 90 percent.
- Note: This condition is included in the Oregon State Implementation Plan (SIP). Any changes to this condition must be submitted as a SIP revision.
- b. In order to calculate compliance with Condition 2.5a, the permittee may average the destruction and removal efficiency of all of its investing rooms using VOC containing slurries. Any investing room for which the VOC content of the slurries used is less than 2% (not including water) VOC on a weighted average basis shall be exempt from RACT and this condition's compliance calculation.

Note: This condition is included in the Oregon State

Implementation Plan (SIP). Any changes to this condition must be submitted as a SIP revision.

**2.6. Investing Room Emission Capture Efficiency**

- a. The permittee must notify the Department prior to making any change to any 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.

**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	83	tons per year
PM <sub>10</sub>	54	tons per year
SO <sub>2</sub>	39	tons per year
NO <sub>x</sub>	58	tons per year
CO	99	tons per year
VOC	99	tons per year
Single HAP	9	tons per year
Combined HAPs	24	tons per year

**3.2. Annual Period**

The annual plant site emissions 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 months period based on the following calculations, performed for each pollutant:

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

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.
- $Ef_n$  = 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 or 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. Testing Requirements**

Within 36 months from the issue date of this permit, the permittee must perform a source test of each of the following emission units.

- LPC-T Cleaning Burn-off (Farr Tenkay) Baghouse

- LPC-S Investing Thermal Oxidizer Baghouse
- LPC-S Cleaning (Dustex) Baghouse
- LPC-S Cleaning (Fabri Jet) Baghouse
- LPC-T Investing Room catalytic oxidizer
- LPC-S Investing Room thermal oxidizer

Note: 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.

- a. Baghouse testing - demonstrate that each baghouse identified above and its associated process, is capable of operating at its maximum normal operating capacity in compliance with Condition 1.2 by conducting a source test of the stack exhaust gas for particulate emissions using Oregon Method 5 (or 8 as approved by the Department). During each 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 each respective baghouse.
  - v. each test report should include grain loading results as well as particulate emission rates expressed in pounds per hour.
- b. LPC-T Investing Room thermal oxidizer - demonstrate the thermal oxidizer is capable of operating at its maximum normal operating capacity in compliance with Condition 2.5.a by conducting a source test demonstrating VOC emission rate (lbs/hr) and destruction efficiency (%DE), using EPA Method 25A.
  - i. Within 30 days of conducting the source test, perform a test to determine capture efficiency of the LPC-T Investing Room by performing a test for

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total enclosure using the test method previously approved and on file at the Department. If testing demonstrates the room to meet the requirements for a total enclosure as stated in 40 CFR 60.711(a)(17), capture efficiency will be presumed to be 100%. If testing does not demonstrate the room to meet the requirements for a total enclosure, the permittee must either: retest and demonstrate total enclosure following the performance of appropriate corrective action; or perform an engineering analysis to quantify the room's capture efficiency.

- ii. During the source test the following parameters must be monitored unless otherwise approved in the pretest plan:
  - 4.3.b.(ii)(a) Operating temperature of the thermal oxidizer;
  - 4.3.b.(ii)(b) hydrocarbon composition of VOC liquids used in the LPC-T Investing Room;
  - 4.3.b.(ii)(c) LPC-T Investing Room production (molds in process/produced);
  - 4.3.b.(ii)(d) exhaust gas flow rates at inlet and outlet;
  - 4.3.b.(ii)(e) VOC concentration at the inlet and outlet of the thermal oxidizer measured as propane
- c. LPC-S thermal oxidizer - demonstrate the thermal oxidizer is capable of operating at its maximum normal operating capacity in compliance with Condition 2.5.a by conducting a source test demonstrating VOC emission rate (lbs/hr) and %DE using EPA Method 25A.
  - i. Within 30 days of conducting the source test, perform a test to determine capture efficiency of the LPC-S Investing Room by performing a test for total enclosure using the test method previously approved and on file at the Department. If testing demonstrates the room to meet the requirements for a total enclosure as stated in 40 CFR 60.711(a)(17), capture efficiency will be presumed to be 100%. If testing does not demonstrate the room to meet the

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- requirements for a total enclosure, the permittee must either: retest and demonstrate total enclosure following the performance of appropriate corrective action; or perform an engineering analysis to quantify the room's capture efficiency.
- ii. During the source test the following parameters must be monitored unless otherwise approved in the pretest plan:
    - 4.3.c.(ii)(a) Operating temperature of the thermal oxidizer;
    - 4.3.c.(ii)(b) hydrocarbon composition of VOC liquids used in the LPC-S Investing Room;
    - 4.3.c.(ii)(c) LPC-S Investing Room production (molds in process/produced);
    - 4.3.c.(ii)(d) exhaust gas flow rates at inlet and outlet;
    - 4.3.c.(ii)(e) VOC concentration at the inlet and outlet of the thermal oxidizer measured as propane
  - d. The following parameters must be monitored and recorded during each required 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 are determined to be necessary by the Department and/or the permittee.
  - e. 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.
  - f. 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

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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.

## **5.0 MONITORING/RECORDKEEPING REQUIREMENTS**

- 5.1. Continuous Monitoring** The permittee must continuously monitor and maintain records of the operating temperatures of the LPC-T catalytic oxidizer and LPC-S thermal oxidizer during all hours of operation.
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- 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 after issuance of this permit.
- 5.4. Weekly Monitoring** The permittee must monitor and record the differential pressure across each fabric filter baghouse control device at least once each calendar week 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 the design differential pressure range is not a violation of this permit condition, however, it is a violation of this permit if the permittee 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, the maintenance shop cyclone, the LPC-T cleaning cyclone, 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 emissions

action level of Condition 2.1.

- b. Quantity of natural gas combusted as reported monthly by gas company invoice (ft<sup>3</sup>/month)
- c. Quantity of natural gas combusted in the steam generating boiler. Fuel monitoring records for any boiler subject to 49 CFR Part 60, Subpart Dc – Standard of Performance for Small Industrial-Commercial-Institutional Steam Generating Units must be maintained on site for a period of not less than five (5) years from the generation of such record
- d. Quantity of steel vacuum cast (tons)
- e. Quantity of steel air cast (tons)
- f. Quantity of titanium vacuum cast (tons)
- g. Tons of metal (all types) cast into parts.
- h. Quantity of individual-HAP metal vacuum cast (tons) for the individual HAP metal of highest usage.
- i. Quantity of individual-HAP metal air cast (tons) for the individual HAP metal of highest usage
- j. Quantity of combined-HAP metal vacuum cast (tons)
- k. Quantity of combined-HAP metal air cast (tons)
- l. Quality of baghouse dust (plant) collected (tons)
- m. Quantity of baghouse dust (maintenance shop) collected (tons)
- n. Quantity of VOC used/emitted to the LPC-S thermal oxidizer (tons)
- o. Quantity of VOC used/emitted to the LPC-T catalytic oxidizer (tons)
- p. Quantity of plastic used at LPC-S (tons)
- q. Quantity of plastic used at LPC-T (tons)
- r. Quantity of miscellaneous VOC and VOC-HAP used (tons)
- s. Quantity of latex flash-fired (tons)
- t. Quantity of latex used and not flash-fired (tons)
- u. Quantity of HCl used (tons)
- v. Number of hours of operation for the Alpha-case removal process.

- w. Quantity of non-emitted VOC waste collected. The quantity may be monitored by: % of initial VOCs in product; using information on the waste profile; analysis 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 emissions limit(s).

- x. Revisions of the pollutant capture efficiency function used for compliance emissions calculations in Condition 4.2.
- y. Calculate the PM, PM<sub>10</sub>, SO<sub>2</sub>, CO, NO<sub>x</sub>, VOC, combined HAPs and highest individual HAP 12 month rolling emission rates for the previous 12 consecutive months. Emissions must be calculated using the formulae in Condition 4.2 and emission factors in Condition 10.0.

- 5.6. Pollutant Capture Efficiency** The permittee must re-evaluate pollutant capture efficiency on any occurrence of an equipment modification or addition to the LPC-T and/or LPC-S Investing Rooms, their exhaust systems or catalytic/thermal oxidizers, that could potentially affect the demonstrated capture efficiency used for compliance emission calculations in Condition 4.2.
- 5.7. Used Oil Monitoring** If used oil is combusted, the permittee must obtain analysis 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 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 of excess emissions events if the excess emission is 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 7.4 by e-mail, telephone, facsimile, or in person.
  - 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. NSPS** The permittee must report to the EPA Administrator at EPA Region 10, the use of any fuel other than pipeline quality natural gas in any boiler subject to 40 CFR Part 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units within 60 days of such use.
- 6.3. Annual Report** For each year this permit is in effect, the permittee must submit to the Department by **February 15** 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 (ft<sup>3</sup>)
    - ii. Quantity of steel vacuum cast (tons)
    - iii. Quantity of steel air cast (tons)
    - iv. Quantity of titanium vacuum cast (tons)

- v. Quantity of metal cast into parts (tons)
- vi. Quantity of individual-HAP metal vacuum cast (tons) for the individual HAP metal of highest usage
- vii. Quantity of individual-HAP metal air cast (tons) for each individual HAP metal of highest usage.
- viii. Quantity of combined-HAP metal vacuum cast (tons)
- ix. Quantity of combined-HAP air cast (tons)
- x. Quantity of factory baghouse dust collected (tons)
- xi. Quantity of maintenance shop baghouse dust collected (tons)
- xii. Quantity of VOC used/emitted to the LPC-S thermal oxidizer (tons)
- xiii. Quantity of VOC used/emitted to the LPC-T catalytic oxidizer (tons)
- xiv. Quantity of plastic used at LPC-S (tons)
- xv. Quantity of plastic used at LPC-T (tons)
- xvi. Quantity of miscellaneous VOC and VOC-HAP used (tons)
- xvii. Quantity of latex flash-fired (tons)
- xviii. Quantity of latex used and not flash-fired (tons)
- xix. Quantity of HCl used (tons)
- xx. The number of hours of operation for the Alpha-case removal process.
- xxi. Quantity of non-emitted VOC waste collected. The quantity may be monitored by: % of initial VOCs in product; using information on the waste profile; analysis 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 emissions limit(s).

- xxii. Revisions of the pollutant capture efficiency function used for compliance emissions calculations in Condition 4.2.
- xxiii. Calculate the PM, PM<sub>10</sub>, SO<sub>2</sub>, CO, NO<sub>x</sub>, VOC, combined HAPs and highest individual HAP 12 month rolling emission rates for the previous 12 consecutive months. Emissions must be calculated using the formulae in Condition 4.2 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.

**6.4. 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.

**6.5. 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.

**6.6. 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 07/01/2012. Two (2) copies of the application must be submitted to the DEQ Permit Coordinator 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 Addresses** All reports, notices, and applications should be directed to the Permit Coordinator for the area where the source is located. The Permit Coordinator addresses are 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** Information about air quality permits and the Department's regulations may be obtained from the DEQ web page at [www.deq.state.or.us](http://www.deq.state.or.us). All inquiries about this permit should be directed to the regional office for the area where the source is located. The Department's regional offices 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** The Annual Fee specified in OAR 340-216-0020, Table 2, Part 2

- Compliance Fee** 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 Company Name Fee** The non-technical permit modification fee specified in OAR 340-216-0020, Table 2, Part 3(a) is due with an application for 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** The permittee must have a copy of the permit available at the

- Availability** 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)	Emission Factor		EF Reference
			(Efn)	EF units	
Natural Gas Fired Equipment	PM	MM ft <sup>3</sup> of natural gas	2.5	lbs/MM ft <sup>3</sup>	DEQ
	PM <sub>10</sub>	MM ft <sup>3</sup> of natural gas	2.5	lbs/MM ft <sup>3</sup>	DEQ
	NO <sub>x</sub>	MM ft <sup>3</sup> of natural gas	100	lbs/MM ft <sup>3</sup>	AP-42
	CO	MM ft <sup>3</sup> of natural gas	84	lbs/MM ft <sup>3</sup>	AP-42
	VOC	MM ft <sup>3</sup> of natural gas	5.5	lbs/MM ft <sup>3</sup>	AP-42
LPC-S Air Casting	PM	Tons of metal poured	4.8	lbs/ton	AP-42
	PM <sub>10</sub>	Tons of metal poured	2.4	lbs/ton	AP-42- 50% PM
	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
LPC-S Vacuum Casting	PM	Tons of metal poured	0.21	lbs/ton	Source EF
	PM <sub>10</sub>	Tons of metal poured	0.21	lbs/ton	Source EF
	PM HAP	Tons of metal poured, % HAP	0.21	lbs/ton	Source EF
	Total HAP	Tons of metal poured, % HAP	0.21	lbs/ton	Source EF
LPC-T Vacuum Casting	PM	Tons of metal poured	0.21	lbs/ton	Source EF
	PM <sub>10</sub>	Tons of metal poured	0.21	lbs/ton	Source EF
	PM HAP	Tons of metal poured, % HAP	0.21	lbs/ton	Source EF
	Total HAP	Tons of metal poured, % HAP	0.21	lbs/ton	Source EF
Baghouses	PM	Tons baghouse dust collected	20	lbs/ton	Bag mfr. Spec.
	PM <sub>10</sub>	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.
LPC-T Cleaning Cyclone Wax Burnout	PM	Tons of metal poured	0.7	lbs/ton	Source Test
	PM <sub>10</sub>	Tons of metal poured	0.36	lbs/ton	Source test 50%PM
	PM	Tons of metal poured in parts	0.027	lbs/ton	Source EF
	PM <sub>10</sub>	Tons of metal poured in parts	0.027	lbs/ton	Source EF

Autoclave (shell de-wax)	VOC	Tons of metal poured in parts	2.7	lbs/ton	Source EF
	VOC HAP	Tons of metal poured in parts	1	lbs/ton	Source EF
	Total HAP	Tons of metal poured in parts	1	lbs/ton	Source EF
	PM	Tons of metal poured in parts	0.14	lbs/ton	Source Test
	PM <sub>10</sub>	Tons of metal poured in parts	0.07	lbs/ton	Source Test 50%PM
	VOC	Tons of metal poured in parts	0.09	lbs/ton	Source EF
	VOC HAP	Tons of metal poured in parts	0.09	lbs/ton	Source EF
	Total HAP	Tons of metal poured in parts	0.09	lbs/ton	Source EF
	LPC-T Misc. Metal Processing	PM	Tons of metal poured in parts	1.32	lbs/ton
PM <sub>10</sub>		Tons of metal poured in parts	0.7	lbs/ton	Source EF
PM HAP		Tons of metal poured in parts, %HAP	1.32	lbs/ton	Source EF
Total HAP		Tons of metal poured in parts, %HAP	1.32	lbs/ton	Source EF
LPC-S Misc. Metal Processing	PM	Tons of metal poured in parts	1.53	lbs/ton	Source EF
	PM <sub>10</sub>	Tons of metal poured in parts	0.8	lbs/ton	Source EF
	PM HAP	Tons of metal poured in parts, %HAP	1.53	lbs/ton	Source EF
	Total HAP	Tons of metal poured in parts, %HAP	1.53	lbs/ton	Source EF
Maintenance Shop Cyclone	PM	Tons of dust collected	200	lbs/ton	Source EF
	PM <sub>10</sub>	Tons of dust collected	200	lbs/ton	Source EF
LPC-S Plastic	VOC	Tons of plastic used	100	lbs/ton	Source EF
	VOC HAP	Tons of plastic used	100	lbs/ton	Source EF
LPC-T plastic	VOC	Tons of plastic used	2000	lbs/ton	Source EF <sup>(1)</sup>
	VOC HAP	Tons of plastic used	2000	lbs/ton	Source EF <sup>(1)</sup>
Misc. VOC Use	VOC	Tons of VOC containing material usage	2000	lbs/ton	Material Balance
	VOC HAP	Tons of VOC containing material usage	2000	lbs/ton	Material Balance
	Total HAP	Tons of VOC containing material usage	2000	lbs/ton	Material Balance
Latex (flash-fired)	VOC	Tons of latex used	40	lbs/ton	Source EF
	VOC HAP	Tons of latex used	40	lbs/ton	Source EF
	Total HAP	Tons of latex used	40	lbs/ton	Source EF
Latex (not flash-fired)	VOC	Tons of latex used	800	lbs/ton	Source EF
	VOC HAP	Tons of latex used	800	lbs/ton	Source EF
	Total HAP	Tons of latex used	800	lbs/ton	Source EF
Misc. HAP	HCl	Tons HCl used	100	lbs/ton	Source EF
	HF	Hours of operation	0.27	lbs/hr	Source EF

(1) Emission factor provided by permittee. Although a thermal oxidizer is used on the LPC-T burnout furnace that accepts molds with plastic in them, no emission control is assumed in the compliance calculation.

## 11.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit	NSR	New Source Review
ASTM	American Society for Testing and Materials	O <sub>2</sub>	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 <sub>10</sub>	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 <sub>x</sub>	nitrogen oxides	SO <sub>2</sub>	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

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Department of Environmental Quality  
 Northwest Region  
 Air Quality Program

**Standard**  
**AIR CONTAMINANT DISCHARGE PERMIT**  
**REVIEW REPORT**

PCC Structurals, LPC  
 4600 SE Harney Drive  
 Portland, OR 97206  
 503-777-7683

Unassigned emissions	
Emission credits	
Source test	X
COMS	
CEMS	
Compliance schedule	
Special conditions	
Annual report	X
Semi-annual report	
Quarterly report	

Monthly report	
Excess emissions report	
NSPS	X
NESHAP	
NSR	
PSD	
RACT	X
FCE	
Public Notice	Cat II

**TABLE OF CONTENTS**

PERMITTING .....2

SOURCE DESCRIPTION.....2

COMPLIANCE.....4

EMISSIONS .....4

MAJOR SOURCE APPLICABILITY .....5

ADDITIONAL REQUIREMENTS.....6

SOURCE TESTING .....7

PUBLIC NOTICE.....8

## **PERMITTING**

### PERMITTING ACTION

1. The permit is a renewal for an existing Air Contaminant Discharge Permit (ACDP) which was issued on 10/31/2002 and was originally scheduled to expire on 09/01/2007.

### OTHER PERMITS

2. Other permits issued or required by the Department of Environmental Quality for this source include:

NPDES 1200-Z Water Quality Permit

### ATTAINMENT STATUS

3. The source is located in a maintenance area for carbon monoxide (CO) and ozone [oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) are precursors of ozone]. The area is in attainment for all other criteria pollutants. This facility has moderate emissions of particulate matter (PM), CO, NO<sub>x</sub>, and VOC and minor emissions of sulfur dioxide (SO<sub>2</sub>).

Note:

- "Nonattainment Area" means any geographic area that exceeds any state or federal primary or secondary ambient air quality standard as designated by the Environmental Quality Commission (EQC) or the U.S. Environmental Protection Agency (EPA)
- "Maintenance Area" means any area that was formerly a nonattainment area, achieved attainment status and was redesignated as an attainment area by EPA, and redesignated a maintenance area by the EQC in Oregon Administrative Rule Chapter 340 division 204

## **SOURCE DESCRIPTION**

### OVERVIEW

4. The permittee operates an investment casting foundry at 4600 SE Harney Drive, Portland, Oregon, referred to as the Large Parts Campus (LPC). LPC is composed of two business units; the steel alloy casting plant (LPC-S) and the titanium casting plant (LPC-T). The facility was built in 1956. The process includes the manufacture of a wax part pattern or replica of the finished product. The wax replica is repeatedly dipped into a slurry and coated with sand. Upon drying this forms a hard ceramic shell. The wax is then melted out of the ceramic shell and the shell is cured to create a mold for casting. Molten metal is then poured into the shell and upon cooling the shell is removed from the metal part by physical and chemical processes. The metal part goes through finishing processes

including heat treating, grinding, abrasive blasting, and welding.

5. The following changes have been made to the facility since the last permit renewal:
- The LPC-T Alpha Case Removal baghouse was removed from service 5/24/2004.
  - A natural gas fired makeup Air Unit #20 was added 5/25/2004.
  - The Carter Day baghouse was replaced with the LPC-S Investing Thermal Oxidizer Baghouse and the RTO fan was modified 7/20/2004.
  - A natural gas fired wax burnout furnace #70 was added to the LPC-T foundry 1/20/2006.
  - LSBS I and II facilities classified as co-located to the LPC main facility 3/22/2006.
  - A natural gas fired duct furnace at LPC-T molding 4/12/2006.
  - The LPC-T Cleaning Pangborne dust collector was replaced with a new shotblast dust collector 7/28/2006.
  - A natural gas fired wax burnout furnace #53 was relocated from another facility to the LPC-S foundry 8/25/2006.
  - A natural gas fired wax burnout furnace #71 was added to the LPC-T foundry 9/13/2006.
  - LPC-T expansion to new McLoughlin Annex includes installation of two new baghouses servicing grinding and sandblasting; a natural gas fired makeup air unit was installed and the makup air unit #20 was relocated from the LPC-T facility to the McLoughlin Annex; a natural gas fueled backup generator was installed. The TBS facility classified as co-located to LPC main facility 02/09/2007.
  - Inclusion of co-located facility equipment controlling particulate emissions and consuming natural gas at a rate >2MM btu/hr. This includes three facilities at the Crosswhite Industrial Park: TBS, LSBS I, and LSBS II, with a total of seven baghouses and two MAUs.

#### PROCESS AND CONTROL DEVICES

6. Existing air contaminant sources at the facility consist of the following:
- a. 1- Cleaver Brooks 14.6 MMBtu/hr natural gas fired boiler without emission controls, installed May 1996
  - b. 1 – steel investing room controlled by a regenerative thermal oxidizer
  - c. 1 – titanium investing room controlled by a catalytic thermal oxidizer
  - d. 1 – autoclaving (shell de-wax) operation.
  - e. 1 – wax burnout operation some units controlled by a thermal oxidizer.
  - f. 1 – LPC-S vacuum casting operation.
  - g. 1 – LPC-T vacuum casting operation
  - h. 1 – LPC-T cleaning operation with cyclone.
  - i. 1 – LPC-S miscellaneous metal processing operation.
  - j. 1 – LPC-T miscellaneous metal processing operation.
  - k. 1 – alpha case removal operation controlled by a wet scrubber.
  - l. 1 – LPC-S backend operations co-located to main facility (LSBS Complex) with six baghouses for grinding and sandblasting and two natural gas fired makeup air units >2MMBTU/hr used for employee comfort for part of the year.
  - m. 2 – LPC-T backend operations co-located to main facility (TBS) with one

baghouse and (McLoughlin Annex) with tow baghouses, two natural gas fired makeup air units and an emergency backup generator.

CONTINUOUS MONITORING DEVICES

7. The facility has the following continuous monitoring devices:
- The operating temperatures of the LPC-S Investing Room thermal oxidizer and the LPC-T Investing Room thermal oxidizer are monitored continuously.

**COMPLIANCE**

8. The facility was inspected on 9/18/2002 and 8/29/2005 and found to be in compliance with permit conditions.
9. During the prior permit period there were no, complaints recorded for this facility.
10. No enforcement actions have been taken against this source since the last permit renewal.

**EMISSIONS**

11. Proposed PSEL information:

Pollutant	Baseline Emission Rate (tons/yr)	Netting Basis		Plant Site Emission Limits (PSEL)		
		Previous (tons/yr)	Proposed (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	PSEL Increase (tons/yr)
PM	62	59	59	83	83	0
PM <sub>10</sub>	54	54	54	54	54	0
SO <sub>2</sub>	0	0	0	39	39	0
NO <sub>x</sub>	19	19	19	58	58	0
CO	16	16	16	99	99	0
VOC	384	157	157	99	99	0
Other						

- a. For PSEL calculation detail, refer to the emission detail sheets attached to the review report.
  - b. The PSEL is a federally enforceable limit on the potential to emit.
12. In addition to the PSEL, the permit includes the following:

Pollutant	Unassigned Emissions (tons/yr) <sup>(a)</sup>	Emission Reduction Credits (tons/yr)
VOC	40 <sup>(b)</sup>	NA

- a. Unassigned emissions equal the difference between the Netting Basis and the PSEL/PTE.
- b. PCC applied for and received ERCs for the actual VOC emission reductions that occurred in 1993. ERCs are good for 10 years from the actual reduction date, and upon expiration ERCs revert to unassigned emissions, and are subject to reduction as specified in OAR 340-222-0045(5). The 58 ton/yr VOC ERC expired in 2003 and has been reduced to 40 ton/yr unassigned emissions in accordance with this rule.

### SIGNIFICANT EMISSION RATE ANALYSIS

13. For each pollutant, the proposed Plant Site Emission Limit is less than the Netting Basis plus the significant emission rate, thus no further air quality analysis is required.
14. An analysis of the proposed PSEL increases over the Netting Basis is shown in the following table.

Pollutant	SER	Requested increase over previous netting basis	Increase due to utilizing capacity that existed in the baseline period	Increase due to physical changes or changes in the method of operation
PM	25	24	NA	24
PM <sub>10</sub>	15	0	NA	0
SO <sub>2</sub>	40	39	NA	39
NO <sub>x</sub>	40	39	NA	39
CO	100	83 <sup>(a)</sup>	NA	83 <sup>(a)</sup>
VOC	40	0	NA	0

- a. The identified 83 ton/year increase for CO was not a requested increase. The Department assigned this increase to set the CO PSEL at the equivalent level of the Generic PSEL for CO as defined in OAR 340-200-0020(56)

## **MAJOR SOURCE APPLICABILITY**

### CRITERIA POLLUTANTS

15. A major source is a facility that has the potential to emit 100 or more tons per year of any

criteria pollutant. Although the source has the capacity to emit above the Title V major source threshold levels, the permittee has elected not to obtain an Oregon Title V operating Permit by requesting a PSEL below the major source threshold levels. The PSEL is a federally enforceable limit on PTE. This facility is not a major source of criteria pollutant emissions.

#### HAZARDOUS AIR POLLUTANTS

16. A major source is a facility that has the potential to emit 10 or more tons/year of any single HAP or 25 or more tons/year of combined HAPs. Although the source has the capacity to emit above the Title V major source threshold levels, the permittee has elected not to obtain an Oregon Title V operating Permit by requesting a PSEL below the major source threshold levels. The PSEL is a federally enforceable limit on PTE. This source is not a major source of hazardous air pollutants.

### **ADDITIONAL REQUIREMENTS**

#### NSPS APPLICABILITY

17. The federal regulation 40 CFR Part 60, Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units is applicable to the source because it has one boiler that meets the applicability criteria of the subpart. The fuel monitoring requirements for this boiler are monthly as allowed by the subpart for natural gas fired affected facilities.

#### NESHAPS/MACT APPLICABILITY

18. There are no sources at this facility for which NESHAPS/MACT standards have been promulgated.

#### RACT APPLICABILITY

19. The facility is located in the Portland AQMA and the following RACT requirements apply:
  - The facility is subject to a source specific RACT. A source specific RACT analysis was done in May 1993 and amended in May 1994. It was determined that RACT for the LPC facility was:
    - 90 percent overall reduction of VOC emissions from each investing room (LPC-S and LBC-T); and
    - no additional control on other existing VOC emitting processes.
    - On 5/23/1997, the Department notified PCC that EPA approved its source specific RACT into the Oregon State Implementation Plan (SIP) on 4/30/1997. PCC had one year from the date of that notification to comply with the source specific RACT rule.

TACT APPLICABILITY

20. The source is not subject to the State's TACT/Highest and Best Rules because it is subject to a source specific RACT rule.

**SOURCE TESTING**PRIOR TESTING RESULTS

21. The results of the most recent source tests are listed below:

Emission Device	Test Date	Pollutant	Measured Value
LPC-T Team 3 & 4 baghouse	10/03/1995	PM	0.0131 gr/dscf 0.02 lbs/hr
LPC-T Cleaning Sandblast baghouse	10/02/1995	PM	3.15e-05 gr/dscf 4.84e-05 lbs/hr
LPC-S Walkin Sandblast baghouse	10/04/1995	PM	2.56e-04 gr/dscf 2.51e-04 lbs/hr
LPC-S Dustex baghouse	10/27/2004	PM	0.00033 gr/dscf 0.062 lbs/hr
Airframes baghouse	01/19/2001	PM	3.8e-05 gr/dscf 0.0066 lbs/hr
LPC-S Investing thermal oxidizer	03/30/2005	VOC	24 ppm 0.615 lbs/hr 92% DE
LPC-T Investing thermal oxidizer	01/17/2006	VOC	39 ppm 1.4 lbs/hr 91.3% DRE
LPC-T Cleaning Burnoff Baghouse	09/29/2005	PM	0.00006 gr/dscf 0.021 lbs/hr 99.9% RE
LPC-S Investing Oxidizer baghouse	09/28/2005	PM	0.00003 gr/dscf 0.0031 lbs/hr 99.9% RE
LBC-S Fabrijet NW (Cleaning Shotblast) baghouse	10/27/2004	PM	0.00015 gr/dscf 0.016 lbs/hr

PROPOSED TESTING

22. The LPC-S and LPC-T Investing Room thermal oxidizers, and four baghouses will be source tested at least once during the permit term for VOC and PM emission respectively

**PUBLIC NOTICE**

23. Pursuant to OAR 340-216-0066(4)(a)(A), renewal of Standard Air Contaminant Discharge Permits, without emission increases, require public notice in accordance with OAR 340-209-0030(3)(b), which requires that the Department provide notice of the proposed permit action and a minimum of 30 days for interested persons to submit written comments. The draft permit will be made available for public notice from September 20, 2007 until 5pm, October 22, 2007. No comments were received.

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10/23/2007