Facility ID: 0210000107 Issuance type: Final State Permit To Operate

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In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 0210000107 Emissions Unit ID: P010 Issuance type: Final State Permit To Operate

Go to the top of this document

Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

   (a) None.

2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

   (a) None.

A. **Applicable Emissions Limitations and/or Control Requirements**

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P010 - reverberatory furnace (formerly known as furnace no. 9) controlled by Sly baghouse no. 2. See section A.2.a for a more complete description of this emissions unit.	OAC rule 3745-31-05 (A)(3) [PTI No. 02-18525]	Process emissions: Particulate emissions (PE) shall not exceed 2.0 pounds per hour and 8.9 tons per year. Hydrogen chloride (HCL) emissions shall not exceed 0.3 pound per ton charged and 1.5 pounds per hour and 6.7 tons per year. Visible particulate emissions from the baghouse stack shall not exceed 10% opacity, as a 6-minute average. Products of combustion: Nitrogen oxides (NOx) emissions shall not exceed 2.8 pounds per hour and 12.2 tons per year. Carbon monoxide (CO) emissions shall not exceed 1.6 pounds per hour and 7.0 tons per year. Sulfur dioxide (SO2) emissions shall not exceed 1.1 pounds per hour and 4.9 tons per year. PE shall not exceed 0.2 pound per hour and 1.1 tons per year. See sections A.2.b, A.2.c, A.2.d, A.2.e, A.2.f, A.2.g, B.1, B2 and B.3.
	40 CFR Part 63, Subpart RRR	Dioxins and furans (D/F) emissions shall not exceed 2.1 x 10-4 grain per ton charged, which, for this emissions unit, is the same as 1.52 x 10-7 pound per hour and 6.7 x 10-7 ton per year.
	OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)	The emission limitations required by these applicable rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

2. **Additional Terms and Conditions**

   (a) This emissions unit is a group 1 furnace which may process oily/greasy scrap. The reverbatory furnace has two 10 mm Btu/hour burners which fire with oxyfuel. The furnace may employ a 2-6% aluminum fluoride flux in the mix. The furnace is equipped with a collection system consisting of a canopy hood and duct work, a cyclone, a spark arrestor, and a 70,000 cfm, negative pressure baghouse with a pulse air cleaning mechanism and hydrated lime injection. The baghouse is equipped with a bag leak detection system. This furnace has a sidewell. The emissions from the sidewell are collected and controlled with the furnace emissions.This is not an in-line fluxer.
   The permittee must provide and maintain easily visible labels posted at this emissions unit that identify

the applicable emission limits and means of compliance, including the type of emissions unit (e.g. group 1 furnace) and the applicable operational standards and control methods (work practice or control device). This includes, but is not limited to, the type of charge to be used (e.g., clean scrap only, all scrap, etc.), flux materials and addition practices, and the applicable operating parameter ranges and requirements as incorporated in the OM&M plan.
This emissions unit shall employ a system for the capture and collection of emissions to meet the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice". The permittee has conducted an evaluation of the capture and collection system for this furnace and modified the system accordingly.
For the bag leak detection system, the permittee shall initiate corrective action within 1 hour of a bag leak detection system alarm. The fabric filter system shall be operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month block reporting period.

In calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time shall be counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If the permittee takes longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by the permittee to initiate corrective action.
This emissions unit shall be operated in accordance with the operation, maintenance and monitoring plan (OM&M) and startup, shutdown and malfunction plan (SSMP) submitted on December 6, 2004.
When a process parameter or add-on air pollution control device operating parameter deviates from the value or range established during the performance test and incorporated in the OM&M plan, the owner or operator must initiate corrective action. Corrective action must restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken must include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation.
The allowable emissions stated in section A.1 above include emissions from the furnace and emissions from the sidewell, combined.

B. **Operational Restrictions**

1. The permittee shall maintain the 3-hour block average inlet temperature for the fabric filter at or below the average temperature established during the most recent performance test which demonstrated compliance with the applicable emission limitations, plus 25F.

   Emission testing conducted September 22-October 1, 2004, demonstrated an average 3-hour block inlet temperature of 143F, after adding 25F, the maximum allowable inlet temperature to the baghouse is 168F, as a 3-hour block average.

2. For the lime injection system, the permittee shall maintain free-flowing lime in the hopper to the feed device at all times and maintain the lime feeder setting at the same level established during the most recent performance testing which demonstrated compliance with the applicable emission limitations.

   Based upon emission testing conducted September 22-October 1, 2004, the free flow of lime into the baghouse shall be maintained at 53.2 lbs/hour.

3. The permittee shall maintain the total reactive flux injection rate for each operating cycle or time period used in the most recent performance test which demonstrated compliance with the applicable emission limitations at or below the average rate established during the performance test.

   Based upon emission testing conducted September 22-October 1, 2004, the maximum allowable flux rate is 510 pounds per hour.

C. **Monitoring and/or Record Keeping Requirements**

1. The permittee shall properly operate, and maintain equipment to continuously monitor and record the pressure drop across the baghouse during operation of this emissions unit, including periods of startup and shutdown. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop on a weekly basis.

   Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

   In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the pressure drop readings immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.
   Based upon emissions testing conducted September 22-October 1, 2004, the pressure drop shall be maintained within the range of 2 to 12 inches of water.

   This range is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA, Northeast District Office. The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range

will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

2. The permittee shall maintain a log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

3. The permittee must inspect the labels for this emissions unit at least once per calendar month to confirm that posted labels as required by section A.2.b are intact and legible. A record of these inspections shall be maintained in a log.

4. To determine the feed/charge rate, the permittee must calibrate, operate and maintain a device to measure and record the total weight of feed/charge to the emissions unit over the same operating cycle or time period used in the performance test.

   a. The feed/charge rate shall be recorded using a scale and a recorder, with calibration of the scale at least once every 6-month period to 1% accuracy. The feed/charge must be measured and recorded on an emission unit-by-emission unit basis. The permittee must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.

   b. The permittee shall maintain records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reative flux injection rate and calculations (including records of the identity, composition and weight of each addition of gaseous, liquid or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken.

   c. The permittee shall also maintain records of the total charge rate for each 24 hour period and calculations of the 3-day, 24-hour rolling average D/F emissions.

5. The permittee must calculate and record the 3-day, 24-hour rolling average emissions of D/F for each secondary aluminum processing unit on a daily basis. To calculate the 3-day, 24-hour rolling average, the owner or operator must:

   a. calculate and record the total weight of material charged to each emissions unit in the secondary aluminum processing unit for each 24-hour day of operation using the feed/charge weight information required above.

   b. multiply the total feed/charge weight to the emissions unit for the 24-hour period (in lbs/ton of feed/charge) by the emission rate for that emission unit (as determined during the most recent performance test that demonstrated compliance) to provide emissions for each emission unit for the 24-hour period, in pounds.

6. The permittee must operate and maintain on a continuous basis a bag leak detection system as required below or a continuous opacity monitoring system as required in 40 CFR Part 63, Subpart RRR. Following initial adjustment of the system, the permittee must not adjust the sensitivity or range, averaging period, alarm set points or alarm delay time except as detailed in the OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition.

7. For the fabric filter inlet temperature, the permittee shall calibrate, maintain and operate a device to continuously monitor and record the temperature of the fabric filter inlet gases consistent with the requirements for continuous monitoring systems in Subparts A and RRR of 40 CFR Part 63. The monitoring system must record the temperature in 15-minute block averages and calculate and record the average temperature for each 3-hour block period.

8. To verify that lime is always free-flowing in the continuous lime injection system the permittee shall inspect each feed hopper or silo at least once each 8-hour period and record the results of each inspection. If lime is found not to be free-flowing during any of the 8-hour periods, the permittee must increase the frequency of inspections to at least once every 4-hour period over the next 3 days. The permittee may return to inspections at least once every 8 hour period if corrective action results in no further blockages of lime during the 3-day period.

   The permittee has requested and received approval to install, operate and maintain a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system to confirm that lime is free-flowing. Alternatively, the permittee may operate this system to determine the lime is free-flowing in the continuous lime injection system.

   If lime is found not to be free-flowing, the permittee must promptly initiate and complete corrective action. The permittee must record the lime feeder setting once each day of operation.

9. The permittee shall maintain files of all information (including all reports and notifications) required by the general provisions and 40 CFR Part 63, Subpart RRR. The permittee must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site.

   The permittee may retain records on microfilm, computer disks, magnetic tape or microfiche. The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.

10. In addition to the general records required by 40 CFR 63.10(b), the permittee must maintain records of:

    a. for the bag leak detection system, the number of total operating hours for the emissions unit during each 6-month reporting period, records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective actions taken;

    b. for the lime injected fabric filter, records of all monitor or sensor output including any event where blockage was found, with a brief explanation of the cause of the blockage and the corrective action taken;

    c. records of feed/charge (or throughput) weights for each operating cycle or time period used in the

performance test;

d. records of monthly inspections for proper unit labeling for this furnace;

e. records of annual inspections of emission capture/collection and closed vent systems; and

f. current copy of all required plans, including any revisions, with records documenting conformance with the applicable plant, including the startup, shutdown and malfunction plan and the OM&M plan.

D. **Reporting Requirements**

1. The permittee submitted a "Notification of Compliance Status Report" on December 6, 2004.

2. The permittee submitted a startup, shutdown and malfunction and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the standard on December 6, 2004. The permittee shall also keep records of each event as required by 40 CFR 63.10(b) and record and report if an action taken during a startup, shutdown or malfunction is not consistent with the procedure in the plan as described in 40 CFR 63.6(e)(3).

3. The permittee shall submit semiannual excursion reports to the Ohio EPA Northeast District Office within 60 days after the end of each 6-month period. The 6-month reporting periods shall be January 1 to June 30, and July 1 to December 31 of each calendar year. These reports shall report if any of the following conditions occurred during a 6-month period:

   a. the corrective action specified in the OM&M plan for a bag leak detection system alarm, or for a continuous opacity monitoring deviation, that was not initiated within 1 hour; and/or

   b. any excursion of an operational requirement, as listed in section B of this permit.

4. For the purpose of annual certifications of compliance required by 40 CFR Part 70 or 71, the owner or operator must certify continuing compliance based upon, but not limited to, the following conditions:

   a. any period of excess emissions, as defined in 40 CFR 63.1516(b)(1), that occurred during the year were reported as required by this subpart; and

   b. all monitoring, record keeping, and reporting requirements were met during the year.

E. **Testing Requirements**

1. Compliance with the emission limitations in section A.1 of these terms and conditions shall be determined in accordance with the following methods:
   Emission Limitation:

   PE shall not exceed 2.0 lbs/hour and 8.9 TPY.

   Applicable Compliance Method:

   Emission testing was conducted on this emissions unit September 22-October 1, 2004. The testing demonstrated emissions of 0.64 lb PE/hour. Based upon the charge rate of 5.65 tons per hour, this equates to 0.11 lb/ton.

   Compliance with the annual emission limit shall be determined by multiplying the emission rate of 0.11 lb/ton by the annual tons production and dividing by 2000 lbs/ton.

   The emission rate (in lb PE per ton charged) which was demonstrated during the most recent emission test shall be used in the above calculation.
   Emission Limitation:

   HCL shall not exceed 0.3 lb/ton charge and 1.5 lbs/hr and 6.7 tpy.

   Applicable Compliance Method:

   Emission testing was conducted on this emissions unit September 22-October 1, 2004. The testing demonstrated emissions below the detection limit on 2 runs and emissions of 0.08 lb/hour on the third run. Based upon the charge rate of 5.65 tons per hour, this equates to 0.01 lb/ton.

   Based upon these results, calculations are not required at this time. The flux which was employed during the emissions testing did contain chlorine.

   The tpy emission limitation was developed by multiplying the short-term allowable HCL emission limitation (1.5 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton.
   Emission Limitation:

   2.1 x 10-4 grain (15g/Mg) of D/F TEQ per ton of feed/charge to the furnace and 6.7E-07 ton per year

   Applicable Compliance Method:

   Emission testing September 22-October 1, 2004, demonstrated D/F TEQ emissions of 1.13E-08 grain/ton charged.

   Compliance with the annual emission limit shall be determined by multiplying the emission rate of 1.13E-08 grain/ton charged by the annual tons production and dividing by 2000 lbs/ton.
   Emission Limitation:

   Visible PE shall not exceed 10% opacity, as a 6-minute average, at any time.

   Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.
Emission Limitations:

Products of Combustion
NOx emissions shall not exceed 2.8 lb/hr and 12.2 tpy.
CO emissions shall not exceed 1.6 lbs/hr and 7.0 tpy.
PE shall not exceed 0.20 lb/hr and 1.1 tpy.
SO2 emissions shall not exceed 1.1 lbs per hour and 4.9 TPY.

Applicable Compliance Method:

Compliance for each pollutant was calculated on a one-time basis as follows:

NOx : (50 lbs/MM ft3)* x (20 MM Btu/hour) x (1scf/1,059 Btu) = 0.9 lb/hour x 8760/2000 = 4.1 tpy
CO: (84 lbs/MM ft3)* x (20 MM Btu/hour) x (1scf/1,059 Btu) = 1.6 lb/hour x 8760/2000 = 7.0 tpy
PE: (7.6 lb/MM ft3)** x (20 MM Btu/hour) x (1scf/1,059 Btu) = 0.14 lb/hour x 8760/2000 =0.63 tpy
SO2: (0.6 lb/MM ft3)** x (20 MM Btu/hour) x (1scf/1,059 Btu) = 0.01 lb/hour x 8760/2000 =0.05 tpy

* AP- 42, Table 1.4-1 (7/98) for natural gas combustion
** AP-42, Table 1.4-2 (7/98) for natural gas combustion

Note: No NOx would be formed during combustion of oxyfuel. Also, various on-line literature suggests combustion of oxyfuel may reduce CO formation 40-60%.

2. The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within the 12 months prior to the expiration of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the hourly emissions limitations for PE and fluoride/HCL; to determine the emissions, in grain D/F TEQ per ton charge/feed, the emissions in lb fluoride/HCL per ton feed/charge and the lb PE per ton feed/charge; to establish the appropriate pressure drop range, the minimum amount of hydrated lime to be injected in the baghouse, the maximum amount of flux employed (cover and reactive), the maximum average 3-hour block temperature of the exhaust gases entering the baghouse, the actual aluminum feed/charge rate during the testing period; the opacity from the baghouse stack and to determine fugitive emissions from the building in the area of the furnace.
c. The following test method(s) shall be employed:

Pollutant Reference Test Method

PE Method 5
Fluoride (HAP)* Method 13A
HCL* Method 26A
D/F Method 23
Opacity Method 9
Fugitives from Method 22
Building**

*If this emissions unit employs a reactive flux containing chlorine, the permittee shall conduct emissions testing for HCL. If this emissions unit employs a reactive flux containing fluoride, the permittee shall conduct emissions testing for fluorides. Emissions testing shall not be required for HCL/fluoride if they are not present in the reactive flux.

**The permit for this emissions unit does not include a fugitive emission limitation from the building. However, this information shall be documented during the testing period in response to citizen concerns.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

f. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

F. **Miscellaneous Requirements**

1. None