

# MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

**The Kroot Corporation  
2915 State Street  
Columbus, Indiana 47202**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 005-11844-00018	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date:

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## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in Conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

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The Permittee owns and operates a stationary aluminum scrap sweating source.

Authorized Individual: Arthur Kroot  
Source Address: 2915 State Street, Columbus, Indiana 47202  
Mailing Address: PO Box 503, Columbus, Indiana 47202-0503  
Phone Number: 812-372-8203  
SIC Code: 3341  
County Location: Bartholomew  
County Status: Attainment for all criteria pollutants  
Source Status: Minor Source Operating Permit  
Minor Source, under PSD Rules;  
Minor Source, Section 112 of the Clean Air Act  
1 of 28 Listed Source Categories

### A.2 Emissions Units and Pollution Control Equipment Summary

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This stationary source is approved to operate the following emissions units and pollution control devices:

One (1) natural gas fired sweat furnace, identified as FCE, installed in 1974, equipped with an afterburner and exhausting to stack S1, capacity: 20.6 million British thermal units per hour and 3,000 pounds of scrap per hour.

**SECTION B** **GENERAL CONDITIONS**

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

**B.1** Permit No Defense [IC 13]

This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

**B.2** Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

**B.3** Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

**B.4** Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of operating permits pursuant to 326 IAC 2 (Permit Review Rules).

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

### C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potentials to emit of PM, PM<sub>10</sub>, SO<sub>2</sub>, VOC, NO<sub>x</sub> and CO are each less than one hundred (100) tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential to emit of PM<sub>10</sub>, SO<sub>2</sub>, VOC, NO<sub>x</sub> or CO to 100 tons per year from this source, shall cause this source to be considered a major source under 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.
- (c) Any change or modification which may increase potential to emit to one hundred (100) tons per year from this source, shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

### C.2 Hazardous Air Pollutants (HAPs) [326 IAC 2-7]

Any change or modification which may increase potential to emit to ten (10) tons per year of any single hazardous air pollutant, twenty-five (25) tons per year of any combination of hazardous air pollutants from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

### C.3 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
  - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP's shall be submitted to IDEM, OAQ, upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

### C.4 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

C.5 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.6 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

C.7 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

**C.8 Opacity [326 IAC 5-1]**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

**C.9 Fugitive Dust Emissions [326 IAC 6-4]**

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

**C.10 Stack Height [326 IAC 1-7]**

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

**Testing Requirements**

**C.11 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]**

- (a) Compliance testing on new emissions units shall be conducted within sixty (60) days after achieving maximum production rate, but no later than one hundred eighty (180) days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAQ, within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

### **Compliance Monitoring Requirements**

#### **C.12 Compliance Monitoring [326 IAC 2-1.1-11]**

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

#### **C.13 Monitoring Methods [326 IAC 3]**

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

#### **C.14 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 1-6]**

(a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

- (1) This condition;
- (2) The Compliance Determination Requirements in Section D of this permit;
- (3) The Compliance Monitoring Requirements in Section D of this permit;
- (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
- (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of:
  - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to

the requirements of Section D of this permit; and

- (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
  - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
  - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied; or
  - (3) An automatic measurement was taken when the process was not operating; or
  - (4) The process has already returned to operating within "normal" parameters and no response steps are required.
- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

### Record Keeping and Reporting Requirements

#### C.16 Malfunctions Report [326 IAC 1-6-2]

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Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a) (1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

#### C.17 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

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- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid

reason for failure to perform the requirements stated in (a) above.

C.18 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
  - (1) The date, place, and time of sampling or measurements;
  - (2) The dates analyses were performed;
  - (3) The company or entity performing the analyses;
  - (4) The analytic techniques or methods used;
  - (5) The results of such analyses; and
  - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
  - (1) Copies of all reports required by this permit;
  - (2) All original strip chart recordings for continuous monitoring instrumentation;
  - (3) All calibration and maintenance records;
  - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.19 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) The reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
  - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
  - (2) A malfunction as described in 326 IAC 1-6-2; or
  - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
  - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (e) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (f) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.20 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality  
Indiana Department of Environmental Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, IN 46206-6015

- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

One (1) natural gas fired sweat furnace, identified as FCE, installed in 1974, equipped with an afterburner and exhausting to Stack S1, capacity: 20.6 million British thermal units per hour and 3,000 pounds of scrap per hour.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

### Emission Limitations and Standards [326 IAC 2-6.1-5(1)]

#### D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2, the allowable PM emission rate from the one (1) sweat furnace FCE shall not exceed 5.38 pounds per hour when operating at a process weight rate of 3000 pounds per hour.

The pounds per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

#### D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this emissions unit and any control devices.

### Compliance Determination Requirements [326 IAC 2-1.1-11]

#### D.1.3 Particulate Matter (PM)

The afterburner for PM control shall be in operation at all times when the one (1) sweat furnace FCE is in operation.

#### D.1.4 Testing Requirements [326 IAC 3-6]

Within 180 days after issuance of this permit, the Permittee shall perform PM testing utilizing methods as approved by the Commissioner. This test shall be repeated at least once every two and one half (2½) years from the date of this valid compliance demonstration. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance.

### Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

#### D.1.5 Visible Emissions Notations

- (a) Visible emission notations of the one (1) sweat furnace FCE and afterburner stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting

startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### D.1.6 Afterburner

When operating, the thermal incinerator shall maintain a minimum operating temperature of 1400EF during operation until a temperature has been determined from the most recent compliant stack test, as approved by IDEM.

#### D.1.7 Parametric Monitoring

- (a) The temperature of the afterburner oxidizing zone shall be observed once per shift when the afterburner is in operation. This temperature shall be recorded, and shall be greater than or equal to the temperature used to demonstrate compliance during the most recent compliance stack test.
- (b) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the reading is outside the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

### **Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]**

#### D.1.8 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.1, D.1.6 and D.1.7, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken as stated below and shall be complete and sufficient to establish compliance with the PM emission limit established in Condition D.1.1.
  - (1) A log of the dates of use;
  - (2) The temperature records for the afterburner and the temperature used to demonstrate compliance during the most recent compliance stack test.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.
- (c) To document compliance with Condition D.1.5, the Permittee shall maintain records of visible emission notations of the sweat furnace and afterburner stack exhaust once per shift.

**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6  
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?\_\_\_\_\_, 25 TONS/YEAR SULFUR DIOXIDE ?\_\_\_\_\_, 25 TONS/YEAR NITROGEN OXIDES ?\_\_\_\_\_, 25 TONS/YEAR VOC ?\_\_\_\_\_, 25 TONS/YEAR HYDROGEN SULFIDE ?\_\_\_\_\_, 25 TONS/YEAR TOTAL REDUCED SULFUR ?\_\_\_\_\_, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?\_\_\_\_\_, 25 TONS/YEAR FLUORIDES ?\_\_\_\_\_, 100 TONS/YEAR CARBON MONOXIDE ?\_\_\_\_\_, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?\_\_\_\_\_, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?\_\_\_\_\_. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ?    Y    N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y    N

COMPANY: \_\_\_\_\_ PHONE NO. : \_\_\_\_\_  
LOCATION: (CITY AND COUNTY) \_\_\_\_\_  
PERMIT NO. \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_  
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM / PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

\*SEE PAGE 2

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

\* **Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE DATA SECTION**

**MINOR SOURCE OPERATING PERMIT  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

<b>Company Name:</b>	<b>The Kroot Corporation</b>
<b>Address:</b>	<b>2915 State Street</b>
<b>City:</b>	<b>Columbus, Indiana 47202</b>
<b>Phone #:</b>	<b>812-372-8203</b>
<b>MSOP #:</b>	<b>005-11844-00018</b>

I hereby certify that The Kroot Corporation is  still in operation.  
 no longer in operation.

I hereby certify that The Kroot Corporation is  in compliance with the requirements of MSOP **005-11844-00018**.  
 not in compliance with the requirements of MSOP **005-11844-00018**.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance:</b>

## Indiana Department of Environmental Management Office of Air Quality

### Addendum to the Technical Support Document for a Minor Source Operating Permit

<b>Source Name:</b>	<b>The Kroot Corporation</b>
<b>Source Location:</b>	<b>2915 State Street, Columbus, Indiana 47202</b>
<b>County:</b>	<b>Bartholomew</b>
<b>Operation Permit No.:</b>	<b>MSOP 005-11844-00018</b>
<b>SIC Code:</b>	<b>3341</b>
<b>Permit Reviewer:</b>	<b>Edward A. Longenberger</b>

On January 26, 2001, the Office of Air Quality (OAQ) had a notice published in The Republic, Columbus, Indiana, stating that The Kroot Corporation had applied for an operating permit to operate an aluminum scrap sweating source with an afterburner. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On January 30, 2001, Charles Licht of Charles Licht Engineering, on behalf of The Kroot Corporation, submitted comments on the proposed operating permit. The summary of the comments and corresponding responses are as follows: The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded**.

#### **Comment 1:**

Please note (see Condition D.1.7(b)) that there is no fan or duct between the main sweating chamber and the afterburner chamber. The two chambers are separated by a refractory wall. The movement of gases is caused by the stack draft. The only measurable parameter can be the chamber temperature. The issue arises again in the Record Keeping Condition D.1.8(a)(3).

#### **Response 1:**

Since there is no fan or measurable duct pressure between the two chambers, the requirements to observe and record duct pressure or fan amperage will be removed from the permit:

#### **D.1.6 Afterburner**

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When operating, the thermal incinerator shall maintain a minimum operating temperature of 1400EF during operation until a temperature ~~and fan amperage~~ has been determined from the most recent compliant stack test, as approved by IDEM.

#### **D.1.7 Parametric Monitoring**

(a) The temperature of the afterburner oxidizing zone shall be observed once per shift when the afterburner is in operation. This temperature shall be recorded, and shall be greater than or equal to the temperature used to demonstrate compliance during the most recent compliance stack test.

~~(b) The duct pressure or fan amperage shall be observed at least once per week when the afterburner is in operation. This pressure or amperage shall be maintained within the range established in the most recent compliant stack test.~~

(eb) The Compliance Response Plan for this unit shall contain troubleshooting contingency and

#### **D.1.8 Record Keeping Requirements**

- 
- (a) To document compliance with Conditions D.1.1, D.1.6 and D.1.7, the Permittee shall maintain records in accordance with (1) through ~~(32)~~ below. Records maintained for (1) through ~~(32)~~ shall be taken as stated below and shall be complete and sufficient to establish compliance with the PM emission limit established in Condition D.1.1.
- (1) A log of the dates of use;
  - (2) The temperature records for the afterburner and the temperature used to demonstrate compliance during the most recent compliance stack test.
  - ~~(3) Weekly records of the duct pressure or fan amperage.~~

**Comment 2:**

The MACT for Secondary Aluminum was promulgated last March and goes into effect in 2003. Does this impact the Kroot permit?

**Response 2:**

This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Part 63, Subpart RRR, because this source does not have the potential to emit ten (10) tons per year of any HAP or twenty-five (25) tons per year of any combination of HAPs and therefore is not considered a major source as defined in 40 CFR 63.2. No change to the permit was made as a result of this comment.

**Comment 3:**

Please clarify the testing requirements. In one place it seems that only PM testing is needed. In another place it suggests that other emissions must be checked. Please clarify the parameters that are required to be tested and where in the permit they are enumerated.

**Response 3:**

The requirement to test PM in Condition D.1.4 is the only testing specifically required by this permit. Condition C.11 states that any testing shall be performed according to the provisions of 326 IAC 3-6. The last sentence on Condition D.1.4 states that IDEM reserves the right to require additional compliance testing if necessary. No change to the permit was made as a result of this comment.

Upon further review, the OAQ has decided to make the following changes to the operating permit: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded**):

1. On January 1, 2001, the IDEM Office of Air Management changed its name to the Office of Air Quality. Therefore, all references to the Office of Air Management (OAM) have been changed to the **Office of Air Quality (OAQ)** in the proposed permit.

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for a Minor Source Operating Permit

#### Source Background and Description

<b>Source Name:</b>	<b>The Kroot Corporation</b>
<b>Source Location:</b>	<b>2915 State Street, Columbus, Indiana 47202</b>
<b>County:</b>	<b>Bartholomew</b>
<b>SIC Code:</b>	<b>3341</b>
<b>Operation Permit No.:</b>	<b>MSOP 005-11844-00018</b>
<b>Permit Reviewer:</b>	<b>Edward A. Longenberger</b>

The Office of Air Quality (OAQ) has reviewed an application from The Kroot Corporation relating to the construction and operation of an aluminum scrap sweating source.

#### Permitted Emission Units and Pollution Control Equipment

There are no permitted facilities operating at this source during this review process.

#### Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted facilities/units:

One (1) natural gas fired sweat furnace, identified as FCE, installed in 1974, equipped with an afterburner and exhausting to Stack S1, capacity: 20.6 million British thermal units per hour and 3,000 pounds of scrap per hour.

#### New Emission Units and Pollution Control Equipment

There are no new facilities proposed at this source during this review process.

#### Existing Approvals

The source has no previous approvals.

#### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
S1	sweat furnace FCE	50	3	3,935	1,400

#### Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under

the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.

- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

### Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on February 9, 2000. Additional information was received on October 10, 2000, and via fax on November 3, 2000.

### Emission Calculations

See pages 1 through 3 of 3 of Appendix A of this document for detailed emissions calculations.

The Potential to Emit for the one (1) sweat furnace FCE was calculated using emission factors from the 1990 edition of AIRS for SCC 3-04-001-01.

Stack test results from a similar sweat furnace and afterburner operating in Chicago, Illinois were provided by the consultant for The Kroot Corporation. The tested emissions were based on a charging rate of 3,400 pounds per hour. The measured emissions from that facility ranged from 1.15 to 4.17 pounds of PM per hour. Using the worst case PM emissions (4.17 pounds per hour) and the process weight rate (3,400 pounds per hour), an after control PM emission factor of 2.45 pounds per ton of metal charged was calculated. This emission factor will be used to calculate the potential PM emissions after controls for the one (1) sweat furnace and afterburner operating at The Kroot Corporation.

### Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	95.5
PM <sub>10</sub>	88.1
SO <sub>2</sub>	23.1
VOC	16.3
CO	7.58
NO <sub>x</sub>	13.0

HAPs	Potential To Emit (tons/year)
Benzene	0.0002
Dichlorobenzene	0.0001
Formaldehyde	0.007
Hexane	0.162
Toluene	0.0003
Lead	0.00004
Cadmium	0.00009
Chromium	0.0001
Manganese	0.00003
Nickel	0.0002
TOTAL	0.170

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM<sub>10</sub> is greater than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1.
- (b) Fugitive Emissions  
 Since this type of operation is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

**Actual Emissions**

The following table shows the actual emissions from the source. This information reflects the 1994 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	11.6
PM <sub>10</sub>	10.6
SO <sub>2</sub>	5.6
VOC	1.92
CO	not reported
NO <sub>x</sub>	0.96
HAP	not reported

**Limited Potential to Emit**

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

Process/facility	Potential to Emit (tons/year)						
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPS
sweat furnace	16.1	87.4	23.0	1.58	0.00	3.94	0.00
natural gas combustion	0.171	0.686	0.054	0.496	7.58	9.02	0.162 / 0.170
Total Emissions	16.3	88.1	23.1	2.08	7.58	13.0	0.162 / 0.170

### County Attainment Status

The source is located in Bartholomew County.

Pollutant	Status
PM <sub>10</sub>	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Bartholomew County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

### Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	16.3
PM <sub>10</sub>	88.1
SO <sub>2</sub>	23.1
VOC	2.08

<b>Pollutant</b>	<b>Emissions (ton/yr)</b>
CO	7.58
NO <sub>x</sub>	13.0

- (a) This existing source is **not** a major stationary source because even though it is one of the 28 listed source categories, it does not emit one hundred (100) tons per year or greater of any regulated pollutants.
- (b) These emissions were based on the calculations in Appendix A of this document.

### Part 70 Permit Determination

#### 326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than one hundred (100) tons per year,
- (b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and
- (c) any combination of HAPS is less than twenty-five (25) tons/year.

This is the first air approval issued to this source.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14, 40 CFR Part 61, 40 CFR Part 62 and 40 CFR Part 63) applicable to this source.

### State Rule Applicability - Entire Source

#### 326 IAC 2-4.1-1 (New Source Toxics Control)

This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments. Therefore, 326 IAC 2-4.1-1 is not applicable.

#### 326 IAC 2-6 (Emission Reporting)

This source is located in Bartholomew County and the potential to emit of CO, VOC, NO<sub>x</sub>, PM<sub>10</sub>, or SO<sub>2</sub> is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

#### 326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute

averaging period as determined in 326 IAC 5-1-4.

- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 6-3-2 (Process Operations)**

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the one (1) sweat furnace FCE operating at a process weight rate of 3,000 pounds per hour (1.5 tons per hour) shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The PM emission from the one (1) sweat furnace FCE after controls is 3.68 pounds per hour which is less than the allowable PM emission rate of 5.38 pounds per hour. Therefore, the one (1) sweat furnace FCE is in compliance with this rule. The afterburner shall be in operation at all times the one (1) sweat furnace FCE is in operation, in order to comply with this limit.

### **Testing Requirements**

PM testing is required for the one (1) sweat furnace FCE and afterburner exhaust (S1) in order to validate the after control PM emission factor of 2.45 pounds per ton of metal charged. Stack testing will determine if the afterburner will provide enough PM control to assure compliance with the hourly PM emission limitation prescribed by 326 IAC 6-3-2.

### **Conclusion**

The operation of this aluminum scrap sweating source shall be subject to the conditions of the attached proposed Minor Source Operating Permit **005-11844-00018**.

**Appendix A: Secondary Metal Production  
Sweating Furnace with Afterburner**

**Company Name:** Kroot Corporation  
**Address City IN Zip:** 2915 State Street, Columbus, Indiana 47201  
**MSOP:** 005-11844  
**Pit ID:** 005-00018  
**Reviewer:** Edward A. Longenberger  
**Date:** February 2, 2000

SCC# 3-04-001-01

TYPE OF MATERIAL	Throughput lbs/hr	1 ton/2000 lbs	Throughput ton/hr
Aluminum	3000	2000	1.5

	PM	PM10	SOx	NOx	VOC
Emission Factor (lb/ton charged)	14.5	13.3	3.5	0.6	2.4
Potential Emissions (lbs/hr)	21.8	20.0	5.25	0.900	3.60
Potential Emissions (lbs/day)	522	479	126	21.6	86.4
<b>Potential Emissions (tons/year)</b>	<b>95.3</b>	<b>87.4</b>	<b>23.0</b>	<b>3.94</b>	<b>15.8</b>
Emissions after control (lb/hr)	3.68	20.0	5.25	0.900	0.360
<b>Emissions after control (tons/yr)</b>	<b>16.1</b>	<b>87.4</b>	<b>23.0</b>	<b>3.94</b>	<b>1.58</b>

**Methodology**

Potential emissions (lbs/hr) = Throughput (ton/hr) x Emission Factor (lb/ton charged)

Potential emissions (lbs/day) = Potential Emissions (lbs/hr) x 24 (hr/day)

Potential emissions (ton/yr) = Potential Emissions (lbs/hr) x 8760 (hr/yr) / 2000 (lb/ton)

PM emission after control based on stack test data from similar furnace and afterburner operating in Chicago, Illinois.

PM after control emission factor (lbs/ton charged) = 4.17 (lb PM / hr) / 3400 (pounds of metal charged / hr) x 2000 (lbs/ton) = 2.45 lbs/ton charged

All other emission factors were taken from AIRS March 1990 edition.

90% VOC control efficiency assumed for afterburner.

**Appendix A: Emissions Calculations  
 Natural Gas Combustion Only  
 MM BTU/HR <100  
 Small Industrial Boiler**

**Company Name: Kroot Corporation  
 Address City IN Zip: 2915 State Street, Columbus, Indiana 47201  
 MSOP: 005-11844  
 Pit ID: 005-00018  
 Reviewer: Edward A. Longenberger  
 Date: February 2, 2000**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20.60	180.46

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.171	0.686	0.054	9.02	0.496	7.58

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 3 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Small Industrial Boiler**  
**HAPs Emissions**

**Company Name: Kroot Corporation**  
**Address City IN Zip: 2915 State Street, Columbus, Indiana 47201**  
**MSOP: 005-11844**  
**Pit ID: 005-00018**  
**Reviewer: Edward A. Longenberger**  
**Date: February 2, 2000**

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.89E-04	1.08E-04	6.77E-03	1.62E-01	3.07E-04

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	4.51E-05	9.93E-05	1.26E-04	3.43E-05	1.89E-04

Methodology is the same as page 2.

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.