# PART 70 SIGNIFICANT SOURCE MODIFICATION
# OFFICE OF AIR MANAGEMENT

## Aluminum Recovery Technologies, Inc.
## 2170 Production Road
## Kendallville, Indiana 46755

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

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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|---|---|
| Source Modification No.: 113-11409-00071 | |
| Issued by:<br>Paul Dubenetzky, Branch Chief<br>Office of Air Management | Issuance Date: |

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## SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the emission units contained in conditions A.1 through 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 approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a stationary secondary aluminum production source.

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|---|---|
| Responsible Official: | Dan Gariepy |
| Source Address: | 2170 Production Road, Kendallville, Indiana 46755 |
| Mailing Address: | 2170 Production Road, Kendallville, Indiana 46755 |
| Phone Number: | 219-349-1590 |
| SIC Code: | 3341 |
| County Location: | Noble |
| County Status: | Attainment for all criteria pollutants |
| Source Status: | Part 70 Permit Program<br>Minor Source, under PSD Rules; |

### A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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

(a) two (2) natural gas-fired rotary dross furnaces (ID RDF #2 and #3), each having a maximum heat input capacity of 12.0 million British thermal units (MMBtu) per hour, each with a maximum melt rate of 12,000 pounds of aluminum scrap per hour, with one (1) new lime injected baghouse (ID Baghouse B) for particulate matter control for both furnaces, exhausting through one (1) stack (ID No. BH #2); and

(b) one (1) rotary dross cooler (ID RDFC), with a maximum capacity to cool 20,000 pounds of salt dross per hour, with one (1) existing lime injected baghouse (ID Baghouse A) for particulate matter control, exhausting through one (1) stack (ID BH #1).

### A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

## SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Permit No Defense [IC 13]

This approval to construct 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 [326 IAC 2-7-1]

Terms in this approval 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 2-7 shall prevail.

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

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

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

However, in the event that the Title V application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Title V draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Title V draft.

(2) If the Title V permit has gone thru final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go thru a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Title V permit at the time of issuance.

(3) If the Title V permit has not gone thru final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Title V permit, and the Title V permit will issued after EPA review.

## SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) Where specifically designated by this approval or required by an applicable requirement, any application form, report, or compliance certification submitted under this approval shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, on the attached Certification Form, with each submittal.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this approval, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this approval, including the following information on each facility:

(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.

If due to circumstances beyond its control, the PMP cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

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

(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, OAM, upon request and shall be subject to review and approval by IDEM, OAM. IDEM, OAM, may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this approval.

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

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

Any such application should be certified by the "responsible official" as defined by 326 IAC 2-7-1(34) only if a certification is required by the terms of the applicable rule

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

C.4 Opacity [326 IAC 5-1]

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

(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.5 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided in this approval, all air pollution control equipment listed in this approval and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.6 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 [326 IAC 2-7-6(1)]**

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 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 approval, 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, OAM.

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
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, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, 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 "responsible official" as defined by 326 IAC 2-7-1(34).

**Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]**

C.8 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.9 Pressure Gauge Specifications

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ( ±2%) of full scale reading.

**Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]**

C.10 Compliance Monitoring Plan - Failure to Take Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] [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 approval;

(3) The Compliance Monitoring Requirements in Section D of this approval;

(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 approval; and

(5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this approval. CRP's shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this approval 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 approval; 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 approval, 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 approval 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 approval conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the approval, 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. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

C.11 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this approval exceed the level specified in any condition of this approval, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM 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, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM 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, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate approval conditions may be grounds for immediate revocation of the approval to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

C.12 Monitoring Data Availability [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)]

(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 approval 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 approval 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 approval.

(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.13 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

(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, OAM 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 approval;

(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 approval, and whether a deviation from an approval 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 within ninety (90) days of approval issuance.

C.14 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

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

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

(b) Unless otherwise specified in this approval, any notice, report, or other submission required by this approval 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, OAM, on or before the date it is due.

(c) Unless otherwise specified in this approval, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) The first report shall cover the period commencing on the date of issuance of this approval and ending on the last day of the reporting period.

## SECTION D.1 FACILITY OPERATION CONDITIONS

**Facility Description [326 IAC 2-7-5(15)]:**

(a) two (2) natural gas-fired rotary dross furnaces (ID RDF #2 and #3), each having a maximum heat input capacity of 12.0 million British thermal units (MMBtu) per hour, each with a maximum melt rate of 12,000 pounds of aluminum scrap per hour, with one (1) lime injected baghouse (ID Baghouse B) for particulate matter control for both furnaces, exhausting through one (1) new stack (ID No. BH #2); and

(b) one (1) rotary dross cooler (ID RDFC), with a maximum capacity to cool 20,000 pounds of salt dross per hour, with one (1) existing lime injected baghouse (ID Baghouse A) for particulate matter control, exhausting through one (1) stack (ID BH #1).

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

### Emission Limitations and Standards [326 IAC 2-7-5(1)]

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

(a) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from each of the rotary dross furnaces #2 and #3 shall not exceed 13.6 pounds per hour when operating at a process weight rate of 12,000 pounds per hour.

(b) Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from the rotary dross cooler shall not exceed 19.2 pounds per hour when operating at a process weight rate of 20,000 pounds per hour.

The pounds per hour limitations were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

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

D.1.2 PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]

Emissions of PM and PM10 from the two (2) rotary dross furnaces #2 and #3 and the rotary dross cooler shall not exceed 100 tons per year. Only the baghouse (ID Baghouse A) is required to be in operation to control PM and PM10 emissions from the rotary dross cooler at all times that the rotary dross cooler is in operation to comply with this limit. Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the rotary dross cooler and Baghouse A.

**Compliance Determination Requirements**

D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

During the period no later than 180 days after startup, the Permittee shall perform PM testing on the baghouse (ID Baghouse A) controlling the rotary dross cooler utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) 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 facility is in compliance.

D.1.5 Particulate Matter (PM)

The baghouse (ID Baghouse A) for PM control shall be in operation and control emissions from the rotary dross cooler at all times that the rotary dross cooler is in operation.

**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

D.1.6 Visible Emissions Notations

(a) Visible emission notations of the two (2) baghouse (ID Baghouse A and B) stack exhausts 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.1.7 Parametric Monitoring

The Permittee shall record the total static pressure drop across each of the baghouses used in conjunction with the two (2) rotary dross furnaces and the rotary dross cooler, at least once daily when these units are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across each of the baghouses shall be maintained within the range of 1.0 and 6.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

D.1.8 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the two (2) rotary dross furnaces and the rotary dross cooler when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. All defective bags shall be replaced.

D.1.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) The process associated with the affected compartments will be shut down or process charge suspended (process banked) immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For single compartment baghouses, the process associated with the failed baghouse will be shut down or process charge suspended (process banked ) immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

**Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

D.1.10 Record Keeping Requirements

(a) To document compliance with Condition D.1.6, the Permittee shall maintain records of visible emission notations of the two (2) baghouse (ID Baghouse A and B) stack exhausts once per shift.

(b) To document compliance with Condition D.1.7, the Permittee shall maintain the following:

(1) Daily records of the following operational parameters during normal operation when venting to the atmosphere:

(A) Inlet and outlet differential static pressure drop across the baghouse tubesheet.

(2) Documentation of all response steps implemented, per event .

(3) Operation and preventive maintenance logs, including work purchase orders, shall be maintained.

(4) Quality Assurance/Quality Control (QA/QC) procedures.

(5) Operator standard operating procedures (SOP).

(6) Manufacturer's specifications or its equivalent.

(7) Equipment "troubleshooting" contingency plan.

(8) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.1.8, the Permittee shall maintain records of the results of the inspections required under Condition D.1.8 and the dates the vents are redirected.

(d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
# OFFICE OF AIR MANAGEMENT
# COMPLIANCE DATA SECTION

## PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Aluminum Recovery Technologies, Inc.
Source Address: 2170 Production Road, Kendallville, Indiana 46755
Mailing Address: 2170 Production Road, Kendallville, Indiana 46755
Source Modification No.: 113-11409-00071

**This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.**

Please check what document is being certified:

**9** Test Result (specify) _____

**9** Report (specify) _____

**9** Notification (specify) _____

**9** Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

# Indiana Department of Environmental Management
# Office of Air Management

## Technical Support Document (TSD) for a Part 70 Significant Source Modification.

### Source Background and Description

| | |
|---|---|
| **Source Name:** | **Aluminum Recovery Technologies, Inc.** |
| **Source Location:** | **2170 Production Road, Kendallville, Indiana 46755** |
| **County:** | **Noble** |
| **SIC Code:** | **3341** |
| **Source Modification No.:** | **113-11409-00071** |
| **Permit Reviewer:** | **Trish Earls/EVP** |

The Office of Air Management (OAM) has reviewed a modification application from Aluminum Recovery Technologies, Inc. relating to the construction of the following emission units and pollution control devices:

(a) two (2) natural gas-fired rotary dross furnaces (ID RDF #2 and #3), each having a maximum heat input capacity of 12.0 million British thermal units (MMBtu) per hour, each with a maximum melt rate of 12,000 pounds of aluminum scrap per hour, with one (1) new lime injected baghouse (ID Baghouse B) for particulate matter control for both furnaces, exhausting through one (1) stack (ID No. BH #2); and

(b) one (1) rotary dross cooler (ID RDFC), with a maximum capacity to cool 20,000 pounds of salt dross per hour, with one (1) existing lime injected baghouse (ID Baghouse A) for particulate matter control, exhausting through one (1) stack (ID BH #1).

### History

On October 6, 1999, Aluminum Recovery Technologies, Inc. submitted an application to the OAM requesting to add additional equipment as listed above to their existing plant. Aluminum Recovery Technologies, Inc. was issued a construction permit (CP-113-10429-00071) on March 5, 1999. In that permit, the source was incorrectly listed as an aluminum foundry with an incorrect SIC code. This is a secondary aluminum production source, not an aluminum foundry, and the correct SIC code is listed above.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

| Stack ID | Operation | Height (feet) | Diameter (feet) | Flow Rate (acfm) | Temperature ($^0$F) |
|---|---|---|---|---|---|
| BH#1 | Baghouse A | 24 | 5 | 60,000 | 200 |
| BH#2 | Baghouse B | 24 | 5 | 60,000 | 200 |

**Recommendation**

The staff recommends to the Commissioner that the Part 70 Significant Source Modification 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 October 6, 1999.

**Emission Calculations**

See Appendix A of this document for detailed emissions calculations (4 pages).

**Potential To Emit of Modification**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source 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."

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

| Pollutant | Potential To Emit (tons/year) |
|---|---|
| PM | 160.76 |
| PM-10 | 160.21 |
| $SO_2$ | 1.11 |
| VOC | 7.94 |
| CO | 8.83 |
| $NO_x$ | 11.04 |

There are no HAPs emitted from this modification.

**Justification for Modification**

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM-10 is greater than 25 tons per year. Therefore, the Part 70 source is being modified through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC IAC 2-7-10.5(g). This source has not yet submitted a Part 70 permit application, therefore, this Part 70 Significant Source Modification will give the source approval to construct and operate the new emission units.

**County Attainment Status**

The source is located in Noble County.

| Pollutant | Status |
|---|---|
| PM-10 | attainment |
| $SO_2$ | attainment |
| $NO_2$ | attainment |
| Ozone | attainment |
| CO | attainment |
| Lead | attainment |

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and $NO_X$ emissions are considered when evaluating the rule applicability relating to the ozone standards. Noble County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx 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 or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

| Pollutant | Emissions (tons/year) |
|---|---|
| PM | Less than 100 |
| PM-10 | Less than 100 |
| $SO_2$ | Less than 100 |
| VOC | Less than 100 |
| CO | Less than 100 |
| NOx | Less than 100 |

(a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories. This source, which was already determined to be one of the 28 listed source categories in the previous permit issued to the source (CP-113-10429-00071) issued on March 5, 1999, belongs to the secondary metal production plant source category.

(b) These emissions are based upon the previous permit issued to the source (CP-113-10429-00071) on March 5, 1999, and additional information from the source. The potential emission calculations included in the previous permit were incorrect. The correction of these emission calculations will be addressed in the Title V or FESOP application that the source will be submitting to IDEM, OAM. However, controlled emissions of all pollutants has been verified to be less than 100 tons per year based on revised emission calculations for the existing equipment.

**Potential to Emit of Modification After Issuance**

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

| | Potential to Emit (tons/year) | | | | | | |
|---|---|---|---|---|---|---|---|
| Process/facility | PM | PM-10 | $SO_2$ | VOC | CO | $NO_X$ | HAPs |
| Rotary Dross Furnaces #2 and #3 | 0.06 | 0.05 | 1.11 | 7.94 | 8.83 | 11.04 | 0.0 |
| Rotary Dross Cooler | 0.74 | 0.74 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Paved Plant Roadways | 0.06 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| PSD Threshold Level | 100 | 100 | 100 | 100 | 100 | 100 | N/A |

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply. The total source emissions of all criteria pollutants after controls will be less than 100 tons per year, therefore, this source will maintain their PSD minor source status.

**Federal Rule Applicability**

(a) This source is not subject to the requirements of the New Source Performance Standard (NSPS), 326 IAC 12, (40 CFR 60.191, Subpart S (Primary Aluminum Reduction), because the source does not perform primary aluminum reduction as defined in 40 CFR 60.191. This source is a secondary aluminum production plant, therefore the requirements under 326 IAC 12, (40 CFR 60.191, Subpart S) do not apply.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this proposed modification.

**State Rule Applicability - Individual Facilities**

326 IAC 6-3-2 (Process Operations)

(a) The PM emissions from each of the new rotary dross furnaces (RDF #2 and #3) shall be limited to 13.6 pounds per hour.

(b) The PM emissions from the new rotary dross cooler (RDFC) shall be limited to 19.2 pounds per hour.

These particulate matter (PM) emission limits are based on 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:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour
= 6.0 tons per hour each for RDF #2 and #3
= 10.0 tons per hour for RDFC

Potential PM emissions from each of the two (2) rotary dross furnaces are less than the 326 IAC 6-3-2 allowable, therefore, these units are in compliance with this rule. Controlled PM emissions from the rotary dross cooler are less than the 326 IAC 6-3-2 allowable, therefore, this unit is in compliance with this rule. Baghouse A shall be in operation at all times the rotary dross cooler (RDFC) is in operation, in order to comply with this limit.

**Compliance Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

1. The two (2) rotary dross furnaces #2 and #3 have applicable compliance monitoring conditions as specified below:

   (a) Visible emissions notations of the baghouse B stack exhaust (ID BH#2) shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. 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. 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. 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. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

   (b) The Permittee shall record the total static pressure drop across the baghouse controlling the two (2) rotary dross furnaces #2 and #3, at least once daily when these units are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 1.0 to 6.0 inches of water or a range established during the latest stack test. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.

These monitoring conditions are necessary because the baghouse for the two (2) rotary dross furnaces #2 and #3 must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-7 (Part 70).

2. The rotary dross cooler has applicable compliance monitoring conditions as specified below:

   (a) Visible emissions notations of the baghouse A stack exhaust (ID BH#1) shall be performed once per shift during normal daylight operations. A trained employee will record whether emissions are normal or abnormal. 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. 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. 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. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

   (b) The Permittee shall record the total static pressure drop across the baghouse controlling the rotary dross cooler, at least once daily when this unit is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 1.0 to 6.0 inches of water or a range established during the latest stack test. The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of the above mentioned range for any one reading.

   These monitoring conditions are necessary because the baghouse controlling emissions from the rotary dross cooler must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations) and 326 IAC 2-7 (Part 70).

**Conclusion**

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 113-11409-00071.

# Appendix A: Emission Calculations
## Emissions Summary

**Company Name:** Aluminum Recovery Technologies, Inc.
**Address City IN Zip:** 2170 Production Road, Kendallville, Indiana 46755
**Significant Source Modification No.:** 113-11409
**Plt ID:** 113-00071
**Reviewer:** Trish Earls/EVP
**Date:** October 6, 1999

**Allowable Emissions Definition (tons/year)**

| | Emissions Generating Activity | | | |
|---|---|---|---|---|
| Pollutant | New Rotary Dross Furnaces #2 and #3 | New Rotary Dross Cooler | Paved Roadways | **TOTAL** |
| PM | 11.80 | 148.90 | 0.06 | 160.76 |
| PM-10 | 11.30 | 148.90 | 0.01 | 160.21 |
| SO2 | 1.11 | 0.00 | 0.00 | 1.11 |
| NOx | 11.04 | 0.00 | 0.00 | 11.04 |
| VOC | 7.94 | 0.00 | 0.00 | 7.94 |
| CO | 8.83 | 0.00 | 0.00 | 8.83 |
| Single HAP | 0.00 | 0.00 | 0.00 | 0.00 |
| Total HAPs | 0.00 | 0.00 | 0.00 | 0.00 |

Total emissions based on rated capacity at 8,760 hours/year.

**Controlled Emissions (tons/year)**

| | Emissions Generating Activity | | | |
|---|---|---|---|---|
| Pollutant | New Rotary Dross Furnaces #2 and #3 | New Rotary Dross Cooler | Paved Roadways | **TOTAL** |
| PM | 0.06 | 0.74 | 0.06 | 0.86 |
| PM-10 | 0.05 | 0.74 | 0.01 | 0.80 |
| SO2 | 1.11 | 0.00 | 0.00 | 1.11 |
| NOx | 11.04 | 0.00 | 0.00 | 11.04 |
| VOC | 7.94 | 0.00 | 0.00 | 7.94 |
| CO | 8.83 | 0.00 | 0.00 | 8.83 |
| Single HAP | 0.00 | 0.00 | 0.00 | 0.00 |
| Total HAPs | 0.00 | 0.00 | 0.00 | 0.00 |

Total emissions based on rated capacity at 8,760 hours/year.

**Appendix A: Secondary Metal Production**
**Aluminum**

**Company Name:** Aluminum Recovery Technologies, Inc.
**Address City IN Zip:** 2170 Production Road, Kendallville, Indiana 46755
**Significant Source Modification No.:** 113-11409
**Plt ID:** 113-00071
**Reviewer:** Trish Earls/EVP
**Date:** October 6, 1999

SCC# 3-04-001-07
Hot Dross Processing Charging/Melt (Furnaces #2 and #3)

PM Control Device: Baghouse B
Control Efficiency: 99.5%

| TYPE OF MATERIAL | Throughput LBS/HR | 1 TON/2000 lbs | TON/HR |
|---|---|---|---|
| Aluminum | 24000 | 2000 | 12 |

| | PM lbs/ton Produced | PM10 lbs/ton Produced | SOx lbs/ton Produced | NOx lbs/ton Produced | VOC lbs/ton Produced | CO lbs/tons Produced |
|---|---|---|---|---|---|---|
| | 0.22 | 0.2 | -- | -- | -- | -- |
| Potential Uncontrolled Emissions lbs/hr | 2.6 | 2.4 | -- | -- | -- | -- |
| Potential Uncontrolled Emissions lbs/day | 63.4 | 57.6 | -- | -- | -- | -- |
| **Potential Uncontrolled Emissions tons/year** | **11.6** | **10.5** | **--** | **--** | **--** | -- |
| Potential Controlled Emissions lbs/hr | 0.01 | 0.01 | -- | -- | -- | -- |
| Potential Controlled Emissions lbs/day | 0.32 | 0.29 | -- | -- | -- | -- |
| **Potential Controlled Emissions tons/year** | **0.06** | **0.05** | **--** | **--** | **--** | **--** |

PM and PM-10 emission factors from AIRS, March 1990.

SCC# 3-04-001-14
Pouring/Casting (Furnaces #2 and #3)

| TYPE OF MATERIAL | Throughput LBS/HR | 1 TON/2000 lbs | TON/HR |
|---|---|---|---|
| Aluminum | 24000 | 2000 | 12 |

| | PM lbs/ton metal charged | PM10 lbs/ton metal charged | SOx lbs/ton metal charged | NOx lbs/ton metal charged | VOC lbs/ton metal charged | CO lbs/tons metal charged |
|---|---|---|---|---|---|---|
| | -- | -- | 0.02 | 0.01 | 0.14 | -- |
| Potential Emissions lbs/hr | -- | -- | 0.24 | 0.12 | 1.68 | -- |
| Potential Emissions lbs/day | -- | -- | 5.76 | 2.88 | 40.32 | -- |
| Potential Emissions tons/year | -- | -- | 1.05 | 0.53 | 7.36 | -- |

Emission factors are from FIRE version 6.01.

Rotary Dross Cooler

PM Control Device: Baghouse A
Control Efficiency: 99.5%

| TYPE OF MATERIAL | Throughput LBS/HR | 1 TON/2000 lbs | TON/HR |
|---|---|---|---|
| Aluminum | 20000 | 2000 | 10 |

| | PM lbs/ton Produced | PM10 lbs/ton Produced | SOx lbs/ton Produced | NOx lbs/ton Produced | VOC lbs/ton Produced | CO lbs/tons Produced |
|---|---|---|---|---|---|---|
| | 3.4 | 3.4 | -- | -- | -- | -- |
| Potential Uncontrolled Emissions lbs/hr | 34.0 | 34.0 | -- | -- | -- | -- |
| Potential Uncontrolled Emissions lbs/day | 816.0 | 816.0 | -- | -- | -- | -- |
| **Potential Uncontrolled Emissions tons/year** | **148.9** | **148.9** | **--** | **--** | **--** | -- |
| Potential Controlled Emissions lbs/hr | 0.17 | 0.17 | -- | -- | -- | -- |
| Potential Controlled Emissions lbs/day | 4.08 | 4.08 | -- | -- | -- | -- |
| **Potential Controlled Emissions tons/year** | **0.74** | **0.74** | **--** | **--** | **--** | **--** |

PM and PM-10 emission factors from the proposed NESHAP for Secondary Aluminum Production (40 CFR 63, Subpart RRR).

**Appendix A: Emission Calculations**
**Natural Gas Combustion Only**
**MM BTU/HR <100**

**Company Name:** Aluminum Recovery Technologies, Inc.
**Address City IN Zip:** 2170 Production Road, Kendallville, Indiana 46755
**Significant Source Modification No.:** 113-11409
**Plt ID:** 113-00071
**Reviewer:** Trish Earls/EVP
**Date:** October 6, 1999

| Heat Input Capacity MMBtu/hr | Potential Throughput MMCF/yr | Baghouse Control Efficiency |
|---|---|---|
| 24.0 | 210.2 | 99.50% |

Heat Input Capacity includes:
Two (2) rotary dross furnaces (Furnaces #2 and #3), each rated at 12.0 MMBtu/hr.

| | Pollutant | | | | | |
|---|---|---|---|---|---|---|
| | PM* | PM10* | SO2 | NOx | VOC | CO |
| Emission Factor in lb/MMCF | 1.9 | 7.6 | 0.6 | 100.0<br>** see below | 5.5 | 84.0 |
| Potential Emissions in tons/yr | 0.20 | 0.80 | 0.06 | 10.51 | 0.58 | 8.83 |
| Controlled Emissions in tons/yr | 1.0E-03 | 4.0E-03 | 0.06 | 10.51 | 0.58 | 8.83 |

*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)

**Company Name:** Aluminum Recovery Technologies, Inc.
**Address City IN Zip:** 2170 Production Road, Kendallville, Indiana 46755
**Significant Source Modification No.:** 113-11409
**Plt ID:** 113-00071
**Reviewer:** Trish Earls/EVP
**Date:** October 6, 1999

## paved roads

The following calculations determine the amount of emissions created by vehicle traffic on unpaved roads, based on 8,760 hours of use and USEPA's AP-42, 5th Edition, Section 13.2.2.2.

I. Trucks

0.385 trip/hr x
0.076 mile/trip x
2 (round trip ) x
8760 hr/yr = 512.6352 miles per year

Ef = k*(sL/2)^0.65*(W/3)^1.5
= 0.05 lb PM-10/mile
= 0.24 lb PM/mile
where k = 0.016 (particle size multiplier for PM-10) (k=0.082 for PM-30 or TSP)
sL = 0.08 mean silt loading (g/m^2)
W = 25 tons average vehicle weight

**PM-10:** $\frac{0.05 \text{ lb/mi} \times 512.64 \text{ mi/yr}}{2000 \text{ lb/ton}}$ = **0.01 tons/yr**

**PM:** $\frac{0.24 \text{ lb/mi} \times 512.64 \text{ mi/yr}}{2000 \text{ lb/ton}}$ = **0.06 tons/yr**