INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov
Eric J. Holcomb
Governor
Bruno L. Pigott
Commissioner

To: Interested Parties

Date: July 17, 2020

From: Jenny Acker, Chief
Permits Branch
Office of Air Quality

Source Name: Advanced Magnesium Alloys Corporation

Permit Level: FESOP Renewal

Permit Number: 095-41887-00114

Source Location: 1820 E. 32nd Street, Anderson, Indiana

Type of Action Taken: Permit Renewal

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above.

The final decision is available on the IDEM website at: http://www.in.gov/apps/idem/caats/
To view the document, choose Search Option **by Permit Number**, then enter permit 41887.

The final decision is also available via IDEM's Virtual File Cabinet (VFC). Please go to: http://www.IN.idem/gov and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria.

(continues on next page)

If you would like to request a paper copy of the permit document, please contact IDEM's Office of Records Management:

IDEM - Office of Records Management
Indiana Government Center North, Room 1207
100 North Senate Avenue
Indianapolis, IN 46204
Phone: (317) 232-8667
Fax: (317) 233-6647
Email: IDEMFILEROOM@idem.in.gov

Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room N103, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

Federally Enforceable State Operating Permit Renewal
OFFICE OF AIR QUALITY

Advanced Magnesium Alloys Corporation
1820 E. 32nd Street
Anderson, Indiana 46013

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

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit 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 2-8 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.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F095-41887-00114 Master Agency Interest ID: 12703	
Issued by: Heath Hartley, Section Chief Permits Branch Office of Air Quality	Issuance Date: July 17, 2020 Expiration Date: July 17, 2030

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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 through A.3 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 2-8-3(b)]

The Permittee owns and operates a stationary secondary magnesium recycling plant.

Source Address:	1820 E. 32nd Street, Anderson, Indiana 46013
General Source Phone Number:	(765) 393-2284
SIC Code:	3341 (Secondary Nonferrous Metals)
County Location:	Madison
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

(a) Two (2) furnace lines, identified as FL-1 and FL-2, constructed in 2001, each line consisting of one (1) electric melting furnace, one (1) electric continuous refining furnace and one (1) continuous ingot pouring operation, each with a maximum throughput of 5.3 tons of scrap magnesium (gates, risers and rejected castings) per hour, a maximum input of 1000 lb salt/hr, and venting through stack #3.

(b) One (1) salt furnace, identified as SF-1, constructed in 2001 with a maximum capacity of 0.37 tons of salt per hour, and venting through stack #3.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

(a) One (1) shredder, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(b) One (1) centrifuge/compactor unit, identified as CENT--001, constructed in 2011, with a maximum throughput capacity of 0.15 tons of machine chips per hour, with no emission controls, exhausting inside the plant.

(c) Two (2) electric resistance heaters to dry scrap magnesium, constructed in 2001, identified as HTR-2110 and HTR-2210, total maximum throughput of 21,120 pounds of scrap magnesium per hour, and venting through stacks 1 and 2.

(d) Ingot cooling process, constructed in 2001, with a total maximum throughput of 10.6 tons of magnesium ingots per hour, and venting internally.

(e) Four (4) heater feed conveyors, constructed in 2001, each with a maximum throughput of 5.3 tons of scrap magnesium per hour, and venting internally.

(f) One (1) shredder feed conveyor, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(g) One (1) shredder discharge conveyor, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(h) One (1) tramp iron removal magnet system, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(i) One (1) shuttle conveyor, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(j) Four (4) feed storage bins, constructed in 2001, with a total maximum capacity of 90 tons, and a maximum throughput of 61,760 tons per year and venting internally.

(k) One (1) portable salt hopper, constructed in 2001, with a maximum throughput capacity of 1000 lbs of salt per hour.

(l) Five (5) natural gas space heaters, constructed in 2001, with a total maximum heat capacity of 8.0 MMBtu/hr, and venting internally.

(m) Two (2) natural gas tool heaters, constructed in 2001, each with a maximum heat capacity of 0.5 MMBtu/hr, and venting internally.

(n) Two (2) natural gas mold heaters, constructed in 2001, each with a maximum heat capacity of 0.2 MMBtu/hr, and venting internally.

(o) One (1) 600 gallon Hydrochloric Acid Storage tank, used to dissolve magnesium deposits in pumps and piping, constructed in 2010, venting indoors.

(p) Paved Roads

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) to renew a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

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, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F095-41887-00114, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-8-6] [IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) The annual compliance certification report 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) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(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; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The

PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-8-12]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with ahealth-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F095-41887-00114 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) 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) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b)(1) and (c). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(1) and (c).

(b) Emission Trades [326 IAC 2-8-15(b)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(b).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(c)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.

(d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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 FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-8590 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 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.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.6 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).

C.7 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.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(c).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(d).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.9 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

C.12 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale. The analog instrument shall be capable of measuring values outside of the normal range.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.13 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(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 submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.16 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the FESOP.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
(DD) The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. 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 request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B - Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) 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.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Two (2) furnace lines, identified as FL-1 and FL-2, constructed in 2001, each line consisting of one (1) electric melting furnace, one (1) electric continuous refining furnace and one (1) continuous ingot pouring operation, each with a maximum throughput of 5.3 tons of scrap magnesium (gates, risers and rejected castings) per hour, a maximum input of 1000 lb salt/hr and venting through stack #3.

(b) One (1) salt furnace, identified as SF-1, constructed in 2001 with a maximum capacity of 0.37 tons of salt per hour, and venting through stack #3.

Insignificant Activities:

(a) One (1) shredder, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(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 2-8-4(1)]

D.1.1 FESOP and HAP Minor Limits [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable, the Permittee shall comply with the following:

(a) The total amount of make-up process salt input in the two (2) furnace lines shall not exceed 3,322 tons of process salt per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) HCl emissions from the two (2) furnace lines shall not exceed 4.65 pounds per ton of process salt used.

(c) The total amount of make-up process salt input to the salt furnace shall not exceed 3,260 tons of process salt per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) HCl emissions from the salt furnace shall not exceed 1.20 pounds per ton of process salt used.

Compliance with these limits, combined with the potential to emit HCl from all other emission units at this source, shall limit the source-wide total potential to emit of HCl to less than ten (10) tons per twelve (12) consecutive month period, total HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable, and this source is an area source of HAP emissions under Section 112 of the Clean Air Act (CAA).

D.1.2 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from the following operations shall not exceed the pounds per hour limitations as follows:

Emission Unit Description	Maximum Process Weight Rate (tons/hour)	326 IAC 6-3-2 Allowable Particulate Emissions (lbs/hour)
Furnace Line 1	5.8	13.31
Furnace Line 2	5.8	13.31
Shredder	30	40.04

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

Interpolation 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.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-8-4(1)]

D.1.4 Testing Requirements [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.1.1, the Permittee shall perform HCl testing of the two (2) furnace lines and salt furnace utilizing methods as approved by the Commissioner at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC 2-8-4(1)][326 IAC 2-8-5(a)(1)]

D.1.5 Visible Emissions Notations

(a) Visible emission notations of furnace lines and salt furnace stack exhausts (Stack #3) shall be performed once per day during normal daylight operations. 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) If abnormal emissions are observed, the Permittee shall take a reasonable response. Section C – Response to Excursions and Exceedances contains the Permittee's

obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.6 Record Keeping Requirement

(a) To document the compliance status with Condition D.1.1(a), the Permittee shall maintain monthly records of the total amount of salt fed into the two (2) furnace lines.

(b) To document the compliance status with Condition D.1.1(c), the Permittee shall maintain monthly records of the total amount of salt fed into the salt furnace.

(c) To document the compliance status with Condition 1.5, the Permittee shall maintain records of daily visible emission notations of the furnace line and slat furnace stack exhausts (Stack #3). The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required by this condition.

D.1.7 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a) and D.1.1(c) shall be submitted not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition.

The report does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(l) Five (5) natural gas space heaters, constructed in 2001, each with a total maximum heat capacity of 8.0 MMBtu/hr, and venting internally.

(m) Two (2) natural gas tool heaters, constructed in 2001, each with a maximum heat capacity of 0.5 MMBtu/hr, and venting internally.

(n) Two (2) natural gas mold heaters, constructed in 2001, each with a maximum heat capacity of 0.2 MMBtu/hr, and venting internally.

(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 2-8-4(1)]

D.2.1 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from the five (5) natural gas-fired space heaters, two (2) tool heaters and two (2) mold heaters each shall be limited to 0.6 pounds per MMBtu heat input.

D.2.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E. 32nd Street, Anderson, Indiana 46013
FESOP Permit No.: F095-41887-00114

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

Please check what document is being certified:

□ Annual Compliance Certification Letter

□ Test Result (specify) _____

□ Report (specify) _____

□ Notification (specify) _____

□ Affidavit (specify) _____

□ 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 QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E. 32nd Street, Anderson, Indiana 46013
FESOP Permit No.: F095-41887-00114

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-8-12

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position:_____

Date: _____

Phone:_____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FESOP Usage Report

(Submit Report Quarterly)

Source Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E. 32nd Street, Anderson, Indiana 46013
FESOP Permit No.: F095-41887-00114
Facility: Furnace Lines 1 and 2
Parameter: Make-up Process Salt
Limit: 3,322 tons per twelve (12) consecutive month period

QUARTER:_____ YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	Process Salt (tons)	Process Salt (tons)	Process Salt (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position:_____

Signature: _____

Date: _____

Phone:_____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

FESOP Quarterly Report

Source Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E. 32nd Street, Anderson, Indiana 46013
FESOP Permit No.: F095-41887-00114
Facility: Salt Furnace
Parameter: Make-up Process Salt
Limit: 3,360 tons per twelve (12) consecutive month period

QUARTER:_____ YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	Process Salt (tons)	Process Salt (tons)	Process Salt (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position:_____

Signature: _____

Date: _____

Phone:_____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E. 32nd Street, Anderson, Indiana 46013
FESOP Permit No.: F095-41887-00114

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B - Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	**Advanced Magnesium Alloys Corporation**
Source Location:	**1820 East 32nd St., Anderson, IN 46013**
County:	**Madison**
SIC Code:	**3341 (Secondary Nonferrous Metals)**
Operation Permit No.:	**F 095-41887-00114**
Permit Reviewer:	**Taylor Wade**

On May 26, 2020, the Office of Air Quality (OAQ) had a notice posted on IDEM's website (https://www.in.gov/idem/5474.htm), stating that Advanced Magnesium Alloys Corporation had applied for a renewal of their Federally Enforceable State Operating Permit (FESOP). The notice also stated that the OAQ proposed to issue a FESOP Renewal 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.

Comments and Responses

On June 25, 2020, Paymon Danesh of EPA Region 5 submitted comments to IDEM, OAQ on the draft FESOP renewal.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

EPA Comment 1:

> Pages 1 and 2 of Appendix A of the Technical Support Document (TSD) contain potential to emit (PTE) emissions calculations for PM, PM10, PM2.5 and HCl for Furnace Lines 1 and 2. However, it is unclear why NOx, VOC and CO emissions were determined to be zero for these emission units.
>
> AP-42 Section 12.12 and the associated Background Report for Secondary Magnesium Smelting notes that, in addition to particulate and HCl emissions, smelting results in nitrogen oxide emissions from the fixation of atmospheric nitrogen which occurs at normal furnace operation temperatures. Carbon monoxide and nonmethane hydrocarbon emission have also been detected. The type of flux used on the molten material and the amount of contamination of the scrap (especially oil and other hydrocarbons) affect the amount of emissions produced.

Response to EPA Comment 1:

> The furnaces operated by the source are electric induction furnaces that melt clean magnesium scrap that does not contain oil or coatings, sourced from die casting facilities. The emission factors listed in AP-42 Chapter 12.12 (Secondary Magnesium Smelting) and WebFIRE 5.0 are derived from testing results from the operation of gas-fired Pot Furnaces. While the background document for AP-42 Chapter 12.12 has testing results of NOx, VOC and CO, it doesn't give any

details on the type of fuel used to power the pot furnace nor the quality of the scrap being melted. Additionally, emission factors for NOx and CO are not listed for other types of secondary metal production facilites (copper, zinc, grey iron) that use electric induction furnaces in their operations. No changes were made as a result of this comment.

EPA Comment 2:

Pages 1 and 6 of Appendix A of the TSD presents emissions calculations for PM, PM10, and PM2.5 for the two casting conveyors and two cooling conveyors. Based on the permit's descriptive information, these emission units appear to be used to convey molten and cooling magnesium. The calculations use emission factors from AP-42 Table 11.24-2 (Metallic Minerals Processing), which are intended for material handling and transfer of crushed/ground mined ore. It is unclear why these factors are appropriate for characterizing emissions from these processes.

Response to EPA Comment 2:

Since the units listed in the permit as “two (2) casting conveyors and two (2) cooling conveyors” are cooling operations, used for transporting cooled and semi-cooled magnesium ingots, negligible emissions are expected. The descriptions of the conveyors have been clarified and their emissions will be removed from the PTE calculations, as reflected in ATSD Appendix A.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities:

(d) ~~Two (2) casting conveyors~~ **Ingot cooling process**, constructed in 2001, with a total maximum throughput of 10.6 tons of ~~molten~~ magnesium **ingots** per hour, and venting internally.

~~(e) Two (2) cooling conveyors, constructed in 2001, with a total maximum throughput of 10.6 tons of magnesium ingots per hour, and venting internally.~~

EPA Comment 3:

There appears to be an error in the Salt Furnace HCl uncontrolled PTE calculation (1.68E-05 tons HCl/yr) on page 2 of Appendix A of the TSD. Using the methodology described in the TSD, the uncontrolled PTE appears to be: (0.372 tons salt / hr) x (0.021 lb HCl / ton salt) x (8,760 hrs/yr) / (2,000 lb/ton) = 0.03 tons HCl /yr

Response to EPA Comment 3:

IDEM agrees with the recommended changes. IDEM OAQ has revised the PTE calculations to accurately show emission estimates. Updated data is reflected in the ATSD Appendix A document.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

	Unrestricted Potential Emissions (ton/year)								
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Single HAP[3]**	**Total HAPs**
Total PTE of Entire Source Including Fugitives*	~~71.24~~ **70.33**	~~69.57~~ **69.21**	~~68.55~~ **68.19**	0.46	4.26	4.73	3.39	~~12.00~~ **12.03** (HCl)	~~12.08~~ **12.11**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	100	100	100	100	100	100	100	--	--

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.

[3]Single highest source-wide HAP

*Fugitive HAP emissions are always included in the source-wide emissions.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

(a) Section B - Annual Fee Payment of the permit has been revised as follows to include an updated phone number for the OAQ, Billing, Licensing, and Training Section:

B.22 Annual Fee Payment [326 IAC 2-1.1-7]

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-~~4230~~**8590** (ask for OAQ, Billing, Licensing, and Training Section) to determine the appropriate permit fee.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Taylor Wade, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-0868 or (800) 451-6027, and ask for Taylor Wade or (317) 233-0868.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

ATSD Appendix A: Emission Calculations
PTE Summary

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Uncontrolled Potential to Emit (tons/yr)									
Emissions Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HCl**	**Total HAPs****
Furnace Line 1	12.65	16.55	16.55	0.00	0.00	0.00	0.00	6.00	6.00
Furnace Line 2	12.65	16.55	16.55	0.00	0.00	0.00	0.00	6.00	6.00
Salt Furnace	1.48	1.48	1.48	0.00	0.00	0.00	0.00	0.03	0.03
Ingot Pouring/Casting	0.00	0.00	0.00	0.44	0.22	3.07	0.00	-	-
Shredder	30.48	30.48	30.48	0.00	0.00	0.00	0.00	-	-
Centrifuge and Compactor	0.00	0.00	0.00	0.00	0.00	1.45	0.00	-	-
Conveyors	6.19	2.48	2.48	0.00	0.00	0.00	0.00	-	-
Salt Hopper	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-	-
HCL Tank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28E-03	8.28E-03
Natural Gas Combustion	0.08	0.31	0.31	0.02	4.04	0.22	3.39	-	7.62E-02
Paved Roads	6.78	1.36	0.33	0.00	0.00	0.00	0.00	-	-
Total	**70.33**	**69.21**	**68.19**	**0.46**	**4.26**	**4.73**	**3.39**	**12.03**	**12.11**

** PM2.5 listed is direct PM2.5*
***Fugitve HAP emissions are always included in the source-wide emissions*

Potential to Emit after Issuance (tons/yr)									
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HCl**	**Total HAPs****
Furnace Line 1	12.65	16.55	16.55	0.00	0.00	0.00	0.00		
Furnace Line 2	12.65	16.55	16.55	0.00	0.00	0.00	0.00	7.72	7.72
Salt Furnace	1.48	1.48	1.48	0.00	0.00	0.00	0.00	1.96	1.96
Ingot Pouring/Casting	0.00	0.00	0.00	0.44	0.22	3.07	0.00	-	-
Shredder	30.48	30.48	30.48	0.00	0.00	0.00	0.00	-	-
Centrifuge and Compactor	0.00	0.00	0.00	0.00	0.00	1.45	0.00	-	-
Salt Hopper	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-	-
Conveyors	6.19	2.48	2.48	0.00	0.00	0.00	0.00	-	-
HCL Tank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28E-03	8.28E-03
Natural Gas Combustion	0.08	0.31	0.31	0.02	4.04	0.22	3.39	-	7.62E-02
Paved Roads	6.78	1.36	0.33	0.00	0.00	0.00	0.00	-	-
Total	**70.33**	**69.21**	**68.19**	**0.46**	**4.26**	**4.73**	**3.39**	**9.69**	**9.76**

** PM2.5 listed is direct PM2.5*
***Fugitve HAP emissions are always included in the source-wide emissions*
***Also operates two (2) electric resistance heaters to dry scrap. These heaters are expected to have any emissions.

ATSD Appendix A: Emission Calculations
Uncontrolled Emissions and Limited Emissions
Furnace Lines: 1 & 2 (Each Line = (1) Melting Furnace + (1) Continuous Refining Furnace + (1) Ingot Pour)

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Process Description - Units	Process Information	Emission Factors (EF)			Limits	
	Maximum Throughput	PM	$PM_{10}/PM_{2.5}$*	HCl	Limited Throughput	Limited HCL EF
	ton/hr	lb/ton	lb/ton	lb/ton**	ton of salt/yr	lb/ton of salt
Furnace Line 1	5.3	0.55	0.71	0.26	3322.0	4.65
Furnace Line 2	5.3	0.55	0.71	0.26		
Salt Furnace	0.372	0.91	0.91	0.02	3260.0	1.20

Notes:
*PM2.5 = PM10
NOx, VOC and CO emission factors are sourced from "Emission Factor Background Report for AP-42 Section 12.12-Secondary Magnesium Smelting"
HCl from Furnace lines is from area of refining furnace where salt is heated to melting point,
HCl emissions from salt bath furnace are from heating salt to melting point to to be used as a tool cleaning agent. The process salt is loaded into furnace using a hand loaded hopper.

Methodology:
Line1 & Line 2 - Electric Melt & Refining Furnaces
PM, PM10, and HCl emission factors based on 3/14/04 stack test for combined emissions from melting and refining furnaces.

Ef (PM): (2.11)(lb/hr) x (1/7743)(hr/lb) / (2000 lb /1 ton)= 0.55 lb/ton-Mg
Ef ($PM_{10}/PM_{2.5}$): (2.76)(lb/hr) *(1/7743)(hr/lb) * (2000 lb /1 ton)= 0.71 lb/ton-Mg
Ef (HCl): (1.0)(lb/hr) * (1/7743)(hr/lb) * (2000 lb /1 ton)= 0.26 lb/ton-Mg

Salt Furnace
PM, PM10, and HCl emission factors based on 2004 stack test.

Ef ($PM/PM_{10}/PM_{2.5}$): (0.25)(lb/hr) * (1/550)(hr/lb) * (2000 lb/ 1 0.91 lb/ton

HCl emission factor from 1/14/2009 stack test.

** Ef (HCl) = 0.010 lb/ton
Ef (HCl) with 100% safety factor = (0.0103367)(lb/ton) x (200%) = 0.021 lb/ton of salt

Process Description - Units	Uncontrolled Potential to Emit (PTE) (tons/yr) (PM and Criteria Pollutants)			Hazardous Air Pollutants (HAPs)	Limited PTE (HAPs)
	PM	PM_{10}	$PM_{2.5}$*	HCl***	HCl
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Furnace Line 1	12.65	16.55	16.55	6.00	7.72
Furnace Line 2	12.65	16.55	16.55	6.00	
***Salt Furnace	1.48	1.48	1.48	3.37E-02	1.96
Total	**26.78**	**34.58**	**34.58**	**12.03**	**9.68**

Methodology:
PM/PM10/PM2.5/HCl Uncontrolled PTE (tons/yr) = Maximum Throughput (lb/hr) x Emission Factor (lb/lb) x 8,760 (hrs/yr) / 2000 (lbs/ton)
***Salt Furnace HCl Uncontrolled PTE (tons/yr) = Maximum Throughput (lb of salt/hr) / 2000 (lbs/ton) x Emission Factor (lb/ton) x 8,760 (hrs/yr) / 2000 (lbs/ton)
HCl Limited PTE (tons/yr) = Limited Throughput (lb of salt/yr) x Limited Emission Factor (lb/ton of salt) / 2000 (lbs/ton)

ATSD Appendix A: Emission Calculations
Pouring/Casting Process

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Emission Unit Description	Maximum Throughput lb/hr	Maximum Throughput tons/hr	Emission Factors SO2 (lb/ton of metal charged)	Emission Factors NOx (lb/ton of metal charged)	Emission Factors VOC (lb/ton of metal charged)	Potential Emissions SO2 (ton/yr)	Potential Emissions NOx (ton/yr)	Potential Emissions VOC (ton/yr)
Ingot Pouring/Casting	10,000	5.00	0.02	0.01	0.14	**0.44**	**0.22**	**3.07**

Note: Emission factors are from FIRE version 6.24 (March 2004). SCC # 3-04-001-14 [Secondary Aluminum Production (Pouring and Casting)].

Methodology:
Potential Emissions (ton/yr) = Emission Factor (lb/ton) x throughput (ton/hr) x 8760 (hr/yr) / 2000 (lb/ton)

ATSD Appendix A: Emission Calculations
Uncontrolled Emissions
Shredder

Company Name: Advanced Magnesium Alloys Corporation
Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Potential to Emit PM, PM10 and PM2.5
The following calculations determine the amount of emissions created by the Shredder.

Emission Unit	Throughput (tons/hr)	Controlled PM Emission Factor* (lbs/ton)	Unontrolled PM Emission Factor* (lbs/ton)	Uncontrolled	
				Particulate Emissions (lbs/hr)	Particulate Emissions (tons/yr)
Shredder	30.0	0.0232	0.232	6.96	30.48

Notes:
The particulate emission factor for the shredder is from the Institute of Scrap Recycling Industries, Inc. "Title V Applicability Workbook" Appendix D, Table D-10.G, for Mixed Scrap.

No emission factor is identified for PM10 or PM2.5 for shredding, therefore it is assumed PM = PM10 = PM2.5

Methodology:
PM/PM10/PM2.5 Controlled PTE (tons/year) = Maximum Capacity (tons/hour) x Emission Factor (lbs/ton) x 8760 (hrs/year) x 1 ton/2000 lbs

Uncontrolled PTE= Controlled PTE (lb/hr) / 1-Controlled Efficiency (%)* (8760 (hrs/yr) /2000 (lbs/ton))

ATSD Appendix A: Emission Calculations
Uncontrolled Emissions
Centrifuge / Compactor

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

VOC: Centrifuge / Compactor					
Process Information					Uncontrolled Potential to Emit (PTE) (tons/yr)
Rate Capacity: Chips + Fluid	Rate Capacity: (Chips Only)	Rate Capacity: Cutting Fluid	Fluid Loss*	Cutting Fluid VOC Content	VOC Emissions
lb/hr	lb/hr	lb/hr	%	% by wt.	ton/yr
306.0	300.0	6.0	100%	5.5%	1.45

Notes:
Machine chips not produced on-site. Obtained wet (w/ cutting fluid), then centrifuged and compacted.
*Cutting fluid is collected in drums, with an estimated loss of 2%; however, VOC emissions are conservatively calculated with 100% expression.
Chip compaction: VOC emission accounted for at centrifuge.
Particulate emissions are negligible. (Metal is oil wet. No high speed cutting or shearing)
Emissions provided by source. Based on mfr's. information from mass balance weighing.

Methodology:
Assumption: VOC content modeled on *CRC True Tap HD Cutting Fluid* - [s.g. = 1.108, VOC = < 0.5 lb/gal]; (= < 5.5% by wt.)
VOC emissions = (Fluid Rate)(lb/hr) x (Loss)(%) x (VOC Content)(%) * (8760)(hr/yr) x (1/2000)(ton/lb) = ton/yr

ATSD Appendix A: Emission Calculations
Uncontrolled Emissions
Conveyors

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Emission Units	Maximum Throughput lb of magnesium/hr	Maximum Throughput ton of magnesium/hr	Emission Factors (EF) PM lb/ton	Emission Factors (EF) $PM_{10}/PM_{2.5}$* lb/ton
Four (4) Heater Feed Conveyor	42,240	21	0.01	0.004
Shredder Feed Conveyor	60,000	30	0.01	0.004
Shredder Discharge Conveyor	60,000	30	0.01	0.004
Tramp Iron Removal Discharge Conveyor	60,000	30	0.01	0.004
Shuttle Conveyor	60,000	30	0.01	0.004

Emission Units	Maximum Throughput lbs of salt/hr	Maximum Throughput ton of salt/hr	Emission Factors (EF) PM lb/ton	Emission Factors (EF) $PM_{10}/PM_{2.5}$* lb/ton
Salt Loading Hopper	1,000	0.5	0.0048	0.0028

Emission Units	Uncontrolled Potential to Emit (PTE) (tons/yr) (PM and Criteria Pollutants) PM tons/yr	PM_{10} tons/yr	$PM_{2.5*}$ tons/yr
Four (4) Heater Feed Conveyor	0.93	0.37	0.37
Shredder Feed Conveyor	1.31	0.53	0.53
Shredder Discharge Conveyor	1.31	0.53	0.53
Tramp Iron Removal Discharge Conveyor	1.31	0.53	0.53
Shuttle Conveyor	1.31	0.53	0.53
Salt Loading Hopper	0.01	0.01	0.01
Total	**6.19**	**2.48**	**2.48**

Notes:
*PM2.5 = PM10
Emission factors from AP-42 Table 11.24-2.
Salt Hopper emission factors from AP-42 Table 11.12.2

Methodology:
Uncontrolled PTE (tons/yr) = Maximum Throughput (lb/hr)/2000 (lbs/ton) x Emission Factor (lb/ton) x 8,760 (hrs/yr) / 2000 (lbs/ton)

ATSD Appendix A: Emission Calculations
Uncontrolled Emissions
HCl Acid Tank

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Process Description - Units	Acid Tank Specifications					Emission Factor (EF)		
	Surface Area	W	L	D	Surface Area	HCl Solution	HCl Pickling Factor	Emission Rate
	(ft2)	(ft)	(ft)	(ft)	(ft^2)	(%)	(lb/(hr-ft2tank-%HCl))	(lb/hr)
HCl Tank	63	3	6	1.50	63	100.0%	0.00003	1.89E-03

Process Description - Units	Uncontrolled Potential to Emit (PTE) (tons/yr)
	HCl
	tons/yr
HCl Tank	8.28E-03

Notes:
The HCl emission factor, was derived from a report of the tests conducted by the South Coast Air Quality Management District (SCAQMD) and Metal Finishing Association of Southern California (MFASC) with collaboration by the California Air Resource Board (CARB).

Acid tank is used to dissolve magnesium deposits stuck in pipes and pumps for re-use.

Methodology:
Surface Area (ft^2) = 2[(Length x Width) + (Width x Depth) + (Length x Depth)]
HCl Uncontrolled Potential to Emit (PTE) (tons/yr) = Emission Factor (lb/(hr-ft^2tank-%HCl)) x Surface Area (ft^2)* HCl Solution (%) x 8760 hr/yr x 1 ton/2000 lbs

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

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Units	Number of Units*	Total Heat Input Capacity (MMBtu/hr)
Space Heaters (5)	5	8.00
Tool Heaters (2)	2	1.00
Mold Heaters (2)	2	0.40
Totals		**9.40**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
9.4	1020	80.7

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.08	0.31	0.31	0.02	4.04	0.22	3.39

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	8.5E-05	4.8E-05	3.0E-03	0.07	1.4E-04	**0.08**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	2.0E-05	4.4E-05	5.7E-05	1.5E-05	8.5E-05	**2.2E-04**
					Total HAPs	**0.08**
					Worst HAP	**0.07**

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

ATSD Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	21.0	1.0	21.0	40.0	840.0	2000	0.379	8.0	2903.4
Vehicle (leaving plant) (one-way trip)	21.0	1.0	21.0	15.0	315.0	2000	0.379	8.0	2903.4
		Totals	**42.0**		**1155.0**			**15.9**	**5806.8**

Average Vehicle Weight Per Trip = 27.5 tons/trip
Average Miles Per Trip = 0.38 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	27.5	27.5	27.5	tons = average vehicle weight
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.555	0.511	0.1255	lb/mile
Mitigated Emission Factor, Eext =	2.337	0.467	0.1147	lb/mile

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	3.39	0.68	0.17
Vehicle (leaving plant) (one-way trip)	3.39	0.68	0.17
Totals	**6.78**	**1.36**	**0.33**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (Before Control) (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (After Control) (tons/yr)	= [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Federally Enforceable State Operating Permit (FESOP) Renewal

Source Description and Location

Source Name:	**Advanced Magnesium Alloys Corporation**
Source Location:	**1820 East 32nd St., Anderson, IN 46013**
County:	**Madison**
SIC Code:	**3341 (Secondary Nonferrous Metals)**
Permit Renewal No.:	**F 095-41887-00114**
Permit Reviewer:	**Taylor Wade**

On September 3, 2019, Advanced Magnesium Alloys Corporation submitted an application to the Office of Air Quality (OAQ) requesting to renew its operating permit. OAQ has reviewed the operating permit renewal application from Advanced Magnesium Alloys Corporation relating to the operation of a secondary magnesium recycling plant. Advanced Magnesium Alloys Corporation was issued its FESOP (F 095-35482-00114) on June 16, 2015.

Existing Approvals

The source was issued FESOP No. F 095-35482-00114 on June 16, 2015. There have been no subsequent approvals issued.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) Two (2) furnace lines, identified as FL-1 and FL-2, constructed in 2001, each line consisting of one (1) electric melting furnace, one (1) electric continuous refining furnace and one (1) continuous ingot pouring operation, each with a maximum throughput of 5.3 tons of scrap magnesium (gates, risers and rejected castings) per hour, a maximum input of 1000 lb salt/hr and venting through stack #3.

(b) One (1) salt furnace, identified as SF-1, constructed in 2001 with a maximum capacity of 0.37 tons of salt per hour, and venting through stack #3.

Insignificant Activities

The source also consists of the following insignificant activities:

(a) One (1) shredder, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(b) One (1) centrifuge/compactor unit, identified as CENT--001, constructed in 2011, with a maximum throughput capacity of 0.15 tons of machine chips per hour, with no emission controls, exhausting inside the plant.

(c) Two (2) electric resistance heaters to dry scrap magnesium, constructed in 2001, identified as HTR-2110 and HTR-2210, total maximum throughput of 10.6 tons of scrap magnesium per hour, and venting through stacks 1 and 2.

(d) Two (2) casting conveyors, constructed in 2001, with a total maximum throughput of 10.6 tons of molten magnesium per hour, and venting internally.

(e) Two (2) cooling conveyors, constructed in 2001, with a total maximum throughput of 10.6 tons of molten magnesium per hour, and venting internally.

(f) Four (4) heater feed conveyors, constructed in 2001, each with a maximum throughput of 5.3 tons of scrap magnesium per hour, and venting internally.

(g) One (1) shredder feed conveyor, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(h) One (1) shredder discharge conveyor, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(i) One (1) tramp iron removal magnet system, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(j) One (1) shuttle conveyor, constructed in 2001, with a maximum throughput of 30 tons of scrap magnesium per hour, and venting internally.

(k) Four (4) feed storage bins, constructed in 2001, with a total maximum capacity of 90 tons, and a maximum throughput of 61,760 tons per year and venting internally.

(l) One (1) portable salt hopper, constructed in 2001, with a maximum throughput capacity of 1000 lbs of salt per hour.

(m) Five (5) natural gas space heaters, constructed in 2001, with a total maximum heat capacity of 8.0 MMBtu/hr, and venting internally.

(n) Two (2) natural gas tool heaters, constructed in 2001, each with a maximum heat capacity of 0.5 MMBtu/hr, and venting internally.

(o) Two (2) natural gas mold heaters, constructed in 2001, each with a maximum heat capacity of 0.2 MMBtu/hr, and venting internally.

(p) One (1) 600 gallon Hydrochloric Acid tank, used to dissolve magnesium deposits in pumps and piping, constructed in 2010 and venting indoors.

(q) Paved Roads

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

County Attainment Status

The source is located in Madison County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective January 16, 2018, for the 2015 8-hour ozone standard.
$PM_{2.5}$	Unclassifiable or attainment effective April 15, 2015, for the 2012 annual $PM_{2.5}$ standard.
$PM_{2.5}$	Unclassifiable or attainment effective December 13, 2009, for the 2006 24-hour $PM_{2.5}$ standard.
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Unclassifiable or attainment effective January 29, 2012, for the 2010 NO_2 standard.
Pb	Unclassifiable or attainment effective December 31, 2011, for the 2008 lead standard.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Madison County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Madison County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Madison County has been classified as attainment or unclassifiable in Indiana for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is classified as a secondary metal production plant it is considered one (1) of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

	Unrestricted Potential Emissions (ton/year)								
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Single HAP[3]**	**Total HAPs**
Total PTE of Entire Source Including Fugitives*	71.24	69.57	68.55	0.46	4.26	4.73	3.39	12.00 (HCl)	12.08
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	100	100	100	100	100	100	100	--	--

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."
[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.
[3]Single highest source-wide HAP
*Fugitive HAP emissions are always included in the source-wide emissions.

Appendix A of this TSD reflects the detailed unrestricted potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of all other regulated air pollutants are less than 100 tons per year.

(b) The potential to emit (as defined in 326 IAC 2-7-1(30)) of any single HAP is equal to or greater than ten (10) tons per year. However, the source will be issued FESOP Renewal because the source will limit HAP emissions to less than the Title V major source threshold levels. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) subject to the provisions of 326 IAC 2-7.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this FESOP renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM[1]	**PM_{10}[1]**	**$PM_{2.5}$[1, 2]**	**SO_2**	**NO_X**	**VOC**	**CO**	**Single HAP[3]**	**Total HAPs**
Total PTE of Entire Source Including Fugitives*	71.26	69.58	68.56	0.46	4.26	4.73	3.39	9.69 (HCl)	9.76
Title V Major Source Thresholds	NA	100	100	100	100	100	100	10	25
PSD Major Source Thresholds	100	100	100	100	100	100	100	NA	NA

	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM[1]	PM_{10}[1]	$PM_{2.5}$[1, 2]	SO_2	NO_X	VOC	CO	Single HAP[3]	Total HAPs

[1]Under the Part 70 Permit program (40 CFR 70), PM_{10} and $PM_{2.5}$, not particulate matter (PM), are each considered as a "regulated air pollutant."

[2]$PM_{2.5}$ listed is direct $PM_{2.5}$.

[3]Single highest source-wide HAP.

*Fugitive HAP emissions are always included in the source-wide emissions.

Appendix A of this TSD reflects the detailed potential to emit of the entire source after issuance.

The source opted to take limit(s) in order to render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA). See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 2-8 (FESOP), 326 IAC 2-2 (PSD), and 326 IAC 2-3 (Emission Offset), and 326 IAC 20 (Hazardous Air Pollutants) for more information regarding the limit(s).

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of one hundred (100) tons per year or more and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This source is not a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability

Federal rule applicability for this source has been reviewed as follows:

New Source Performance Standards (NSPS):

(a) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984, 40 CFR 60, Subpart Kb and 326 IAC 12, are not included in the permit for the hydrochloric acid storage tank, because this tank has a sorage capacity less than $75m^3$ (19,813 gallons).

(b) There are no other New Source Performance Standards (40 CFR Part 60) and 326 IAC 12 included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Steel Pickling-HCl Process Facilities and Hydrochloric Acid Regeneration Plants, 40 CFR 63, Subpart CCC and 326 IAC 20-29 are not included in the permit for this source, since this source does not engage in steel pickling and is not a major source of HAPs.

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for hydrochloric Acid Production 40 CFR 63, Subpart NNNNN and 326 IAC 20-76 are not included in the permit for this source, since this source in not a HCl production facility and is not a major source of HAPs.

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Primary Magnesium Refining, 40 CFR 63, Subpart TTTTT are not included in the permit for this source, since the source does not produce magnesium metal and magnesium metal alloys

from natural sources of magnesium chloride such as sea water or water from the Great Salt Lake and magnesium bearing ores.

(d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Nonferrous Metals Processing Area Sources 40 CFR 63, Subpart TTTTTT are not included in the permit for this source, since the source does not meet the definition of a secondary nonferrous metals processing facility, as defined in 40 CFR 63.11462. The source only processes metal scrap from die-casters (gates, risers and rejected castings), which does not constitute "post-consumer" scrap.

Note: Although this source is a secondary nonferrous metals processing facility with a melt furnace, in order for the source to continue to not to be subject to 40 CFR 63, Subpart TTTTTT, the material processed for melt in this facility must continue to be other than post-consumer scrap.

(e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Aluminum, Copper, and Other Nonferrous Foundries, 40 CFR 63, Subpart ZZZZZZ are not included in the permit for this source, since the source is not considered an aluminum, copper, or other nonferrous foundry as defined by 40 CFR 63.11556. This source melts magnesium to produce ingot bars.

(f) There are no other National Emission Standards for Hazardous Air Pollutants under 40 CFR 63, 326 IAC 14 and 326 IAC 20 included in the permit.

Compliance Assurance Monitoring (CAM):

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability - Entire Source

State rule applicability for this source has been reviewed as follows:

326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

326 IAC 1-5-2 (Emergency Reduction Plans)
The source is subject to 326 IAC 1-5-2.

326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset)
PSD and Emission Offset applicability is discussed under the Potential to Emit After Issuance section of this document.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The provisions of 326 IAC 2-4.1 apply to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.41, after July 27, 1997, unless the major source has been specifically regulated under or exempted from regulation under a NESHAP that was issued pursuant to Section 112(d), 112(h), or 112(j) of the Clean Air Act (CAA) and incorporated under 40 CFR 63. On and after June 29, 1998, 326 IAC 2-4.1 is intended to implement the requirements of Section 112(g)(2)(B) of the Clean Air Act (CAA).

The operation of this source will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)
This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than 5 tons per year. Therefore, this rule does not apply.

326 IAC 2-8-4 (FESOP) and 326 IAC 20 (Hazardous Air Pollutants)
FESOP applicability is discussed under the Potential to Emit After Issuance section of this document.

FESOP HAP Limit(s)

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA), and render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable, the Permittee shall comply with the following:

(a) The total amount of make-up process salt input in the two (2) furnace lines shall not exceed 3,322 tons of process salt per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) HCl emissions from the two (2) furnace lines shall not exceed 4.65 pounds per ton of process salt used.

(c) The total amount of make-up process salt input to the salt furnace shall not exceed 3,360 tons of process salt per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) HCl emissions from the salt furnace shall not exceed 1.20 pounds per ton of process salt used.

Compliance with these limits, combined with the potential to emit HAP from all other emission units at the source, shall limit the source-wide potential to emit single HAP to less than 10 tons per twelve (12) consecutive month period and the source-wide potential to emit total HAPs to less than 25 tons per twelve (12) consecutive month period, and shall render the source an area source of HAP emissions under Section 112 of the Clean Air Act (CAA) and shall render the requirements of 326 IAC 2-7 (Part 70 Permits) not applicable.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source is not subject to the requirements of 326 IAC 6-5, because the source has potential fugitive particulate emissions of less than twenty-five (25) tons per year.

326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-1(a), this source (located in Madison County) is not subject to the requirements of 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 (Particulate Matter Limitations for Lake County)
Pursuant to 326 IAC 6.8-1-1(a), this source (located in Madison County) is not subject to the requirements of 326 IAC 6.8 because it is not located in Lake County.

326 IAC 6.8 (Lake County: Fugitive Particulate Matter)
Pursuant to 326 IAC 6.8-10-1, this source (located in Madison County) is not subject to the requirements of 326 IAC 6.8-10 because it is not located in Lake County.

State Rule Applicability – Individual Facilities

State rule applicability has been reviewed as follows:

Furnace Lines

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(a), the requirements of 326 IAC 6-3-2 are applicable to the furnace lines and salt furnace, since they are manufacturing processes not exempted from this rule under 326 IAC 6-3-1(b) and is not subject to a particulate matter limitation that is as stringent as or more stringent than the particulate limitation established in this rule as specified in 326 IAC 6-3-1(c).

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the furnace lines and salt furnace shall not exceed the pounds per hour limit listed below. P = 5.3 ton/hr scrap + 0.5 ton/hr salt. The pound 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:
>
> $E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

Summary of Process Weight Rate Limits		
Process / Emission Unit	**P (ton/hr)**	**E (lb/hr)**
Furnace Line 1	5.8	13.31
Furnace Line 2	5.8	13.31

> Based on calculations, control equipment is not needed to comply with this limit.

326 IAC 7-1.1 Sulfur Dioxide Emission Limitations
This emission unit is not subject to 326 IAC 326 IAC 7-1.1 because it has a potential to emit (or limited potential to emit) sulfur dioxide (SO2) of less than 25 tons per year or 10 pounds per hour.

326 IAC 9-1 (Carbon Monoxide Emission Limits)
The requirements of 326 IAC 9-1 do not apply to the source, because this source does not operate a catalyst regeneration petroleum cracking system or a petroleum fluid coker, grey iron cupola, blast furnace, basic oxygen steel furnace, or other ferrous metal smelting equipment.

326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Categories)
The requirements of 326 IAC 10-3 do not apply to the furnace lines, since these units are not a blast furnace gas-fired boiler, a Portland cement kiln, or a facility specifically listed under 326 IAC 10-3-1(a)(2).

Salt Furnace

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(14), the salt furnace is not subject to the requirements of 326 IAC 6-3, since the unit has potential particulate emissions less than 0.551 lbs per hour.

Shredder

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(a), the requirements of 326 IAC 6-3-2 are applicable to the shredder, since it is a manufacturing process not exempted from this rule under 326 IAC 6-3-1(b) and is not subject to a particulate matter limitation that is as stringent as or more stringent than the particulate limitation established in this rule as specified in 326 IAC 6-3-1(c).

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the shredder shall not exceed 40.04 pounds per hour when operating at a process weight rate of 30 tons per hour. The pound 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:
>
> $E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour
>
> Based on calculations, control equipment is not needed to comply with this limit.

Centrifuge/Compactor

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, this unit was constructed after January 1, 1980, it is not subject to the requirements of 326 IAC 8-1-6 because its unlimited VOC potential emissions are less than twenty-five (25) tons per year.

Conveyors

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(14), the two (2) casting conveyors, two (2) cooling conveyors, four (4) heater feed conveyors, one (1) shredder feed conveyor, one (1) shredder discharge conveyor, one (1) tramp iron removal magnet system and one (1) shuttle conveyor are not subject to the requirements of 326 IAC 6-3, since they each have potential particulate emissions less than 0.551 lbs per hour.

Natural Gas Combustion

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)
Pursuant to 326 IAC 6-2-1(d), indirect heating facilities which received permit to construct after September 21, 1983 are subject to the requirements of 326 IAC 6-2-4.

> The particulate matter emissions (Pt) shall be limited by the following equation:
>
> $$Pt = \frac{1.09}{Q^{0.26}}$$
>
> Where:
>
> Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu).
>
> Q = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation.

Pursuant to 326 IAC 6-2-4(a), for Q less than 10 MMBtu/hr, Pt shall not exceed 0.6 lb/MMBtu.

Indirect Heating Units Which Began Operation After September 21, 1983						
Facility	Construction Date (Removal Date)	Operating Capacity (MMBtu/hr)	Q (MMBtu/hr)	Calculated Pt (lb/MMBtu)	Particulate Limitation, (Pt) (lb/MMBtu)	PM PTE based on AP-42 (lb/MMBtu)
Five (5) Space Heaters	2001	1.60 (each)	9.40	0.61	0.6	0.002
Two (2) Tool Heaters		0.50 (each)				
Two (2) Mold Heater		0.20 (each)				
Where: Q = Includes the capacity (MMBtu/hr) of the new unit(s) and the capacities for those unit(s) which were in operation at the source at the time the new unit(s) was constructed.						
Note: Emission units shown in strikethrough were subsequently removed from the source. The effect of removing these units on "Q" is shown in the year the boiler was removed.						

Storage Tank

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, this unit was constructed after January 1, 1980, it is not subject to the requirements of 326 IAC 8-1-6 because its unlimited VOC potential emissions are less than twenty-five (25) tons per year.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
Pursuant to 326 IAC 8-4-3(a), the one (1) 600 gallon hydrochloric acid tank, at this source is not subject to the requirements of 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities), since this unit is not a petroleum liquid storage vessel with a capacity greater than thirty-nine thousand (39,000) gallons.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-8 are required to assure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in 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.

(a) The Compliance Determination Requirements applicable to this source are as follows:

Testing Requirements:

Summary of Testing Requirements					
Emission Unit	**Control Device**	**Timeframe for Testing or Date of Initial Valid Demonstration)**	**Pollutant/ Parameter**	**Frequency of Testing**	**Authority**
Furnace Line 1, Furnace Line 2 and Salt Furnace	N/A	June 2019	HCl	every five (5) years	326 IAC 2-8-4 326 IAC 2-4.1

(b) The Compliance Monitoring Requirements applicable to this source are as follows:

Emission Unit	Type of Parametric Monitoring	Frequency	Range or Specification
Furnace Line 1, Furnace Line 2 and Salt Furnace (Stack 3)	Visible emission notations	Daily	Verify whether emissions are normal or abnormal

Proposed Changes

As part of this permit approval, the permit may contain new or different permit conditions and some conditions from previously issued permits/approvals may have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes.

The following changes were made to conditions contained previously issued permits/approvals (these changes may include Title I changes):

(1) For this renewal, IDEM OAQ has included IDEM's Master Agency Interest Identification (ID) number of 12703 in the permit cover page signature box.

(2) Effective June 8, 2019, the requirements of 326 IAC 14-10 (Emission Standards for Asbestos Demolition and Renovation Operations) were amended. Based on the amended rule, Section C.7 - Asbestos Abatement Projects of the permit has been revised.

Conclusion and Recommendation

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 September 3, 2019.

The operation of this secondary magnesium recycling plant shall be subject to the conditions of the attached proposed FESOP Renewal No. 095-41887-00114.

The staff recommends to the Commissioner that the FESOP Renewal be approved.

IDEM Contact

(a) If you have any questions regarding this permit, please contact Taylor Wade, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-0868 or (800) 451-6027, and ask for Taylor Wade or (317) 233-0868.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

Appendix A: Emission Calculations
PTE Summary

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Uncontrolled Potential to Emit (tons/yr)									
Emissions Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HCl**	**Total HAPs****
Furnace Line 1	12.65	16.55	16.55	0.00	0.00	0.00	0.00	6.00	6.00
Furnace Line 2	12.65	16.55	16.55	0.00	0.00	0.00	0.00	6.00	6.00
Salt Furnace	1.48	1.48	1.48	0.00	0.00	0.00	0.00	0.00	0.00
Ingot Pouring/Casting	0.00	0.00	0.00	0.44	0.22	3.07	0.00	-	-
Shredder	30.48	30.48	30.48	0.00	0.00	0.00	0.00	-	-
Centrifuge and Compactor	0.00	0.00	0.00	0.00	0.00	1.45	0.00	-	-
Conveyors	7.12	2.85	2.85	0.00	0.00	0.00	0.00	-	-
Salt Hopper	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-	-
HCL Tank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28E-03	8.28E-03
Natural Gas Combustion	0.08	0.31	0.31	0.02	4.04	0.22	3.39	-	7.62E-02
Paved Roads	6.78	1.36	0.33	0.00	0.00	0.00	0.00	-	-
Total	**71.26**	**69.58**	**68.56**	**0.46**	**4.26**	**4.73**	**3.39**	**12.00**	**12.08**

** PM2.5 listed is direct PM2.5*
***Fugitve HAP emissions are always included in the source-wide emissions*

Potential to Emit after Issuance (tons/yr)									
Emission Unit	**PM**	**PM10**	**PM2.5 ***	**SO_2**	**NOx**	**VOC**	**CO**	**HCl**	**Total HAPs****
Furnace Line 1	12.65	16.55	16.55	0.00	0.00	0.00	0.00		
Furnace Line 2	12.65	16.55	16.55	0.00	0.00	0.00	0.00	7.72	7.72
Salt Furnace	1.48	1.48	1.48	0.00	0.00	0.00	0.00	1.96	1.96
Ingot Pouring/Casting	0.00	0.00	0.00	0.44	0.22	3.07	0.00	-	-
Shredder	30.48	30.48	30.48	0.00	0.00	0.00	0.00	-	-
Centrifuge and Compactor	0.00	0.00	0.00	0.00	0.00	1.45	0.00	-	-
Salt Hopper	0.01	0.01	0.01	0.00	0.00	0.00	0.00	-	-
Conveyors	7.12	2.85	2.85	0.00	0.00	0.00	0.00	-	-
HCL Tank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.28E-03	8.28E-03
Natural Gas Combustion	0.08	0.31	0.31	0.02	4.04	0.22	3.39	-	7.62E-02
Paved Roads	6.78	1.36	0.33	0.00	0.00	0.00	0.00	-	-
Total	**71.26**	**69.58**	**68.56**	**0.46**	**4.26**	**4.73**	**3.39**	**9.69**	**9.76**

** PM2.5 listed is direct PM2.5*
***Fugitve HAP emissions are always included in the source-wide emissions*
***Also operates two (2) electric resistance heaters to dry scrap. These heaters are expected to have any emissions.

Appendix A Emission Calculations
Uncontrolled Emissions and Limited Emissions
Furnace Lines: 1 & 2 (Each Line = (1) Melting Furnace + (1) Continuous Refining Furnace + (1) Ingot Pour)

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Process Description - Units	Process Information	Emission Factors (EF)			Limits	
	Maximum Throughput	PM	$PM_{10}/PM_{2.5}$*	HCl	Limited Throughput	Limited HCL EF
	ton/hr	lb/ton	lb/ton	lb/ton**	ton of salt/yr	lb/ton of salt
Furnace Line 1	5.3	0.55	0.71	0.26	3322.0	4.65
Furnace Line 2	5.3	0.55	0.71	0.26		
Salt Furnace	0.372	0.91	0.91	0.02	3260.0	1.20

Notes:
*PM2.5 = PM10
HCl from Furnace lines is from area of refining furnace where salt is heated to melting point,
HCl emissions from salt bath furnace are from heating salt to melting point to to be used as a tool cleaning agent. The process salt is loaded into furnace using a hand loaded hopper.

Methodology:
Line1 & Line 2 - Electric Melt & Refining Furnaces
PM, PM10, and HCl emission factors based on 3/14/04 stack test for combined emissions from melting and refining furnaces.

Ef (PM): (2.11)(lb/hr) x (1/7743)(hr/lb) / (2000 lb /1 ton)= 0.55 lb/ton-Mg
Ef ($PM_{10}/PM_{2.5}$): (2.76)(lb/hr) *(1/7743)(hr/lb) * (2000 lb /1 ton)= 0.71 lb/ton-Mg
Ef (HCl): (1.0)(lb/hr) * (1/7743)(hr/lb) * (2000 lb /1 ton)= 0.26 lb/ton-Mg

Salt Furnace
PM, PM10, and HCl emission factors based on 2004 stack test.

Ef ($PM/PM_{10}/PM_{2.5}$): (0.25)(lb/hr) * (1/550)(hr/lb) * (2000 lb/ 1 tc 0.91 lb/ton

HCl emission factor from 1/14/2009 stack test.

** Ef (HCl) = 0.010 lb/ton
Ef (HCl) with 100% safety factor = (0.0103367)(lb/ton) x (200%) = 0.021 lb/ton of salt

Process Description - Units	Uncontrolled Potential to Emit (PTE) (tons/yr)				Limited PTE
	(PM and Criteria Pollutants)			Hazardous Air Pollutants (HAPs)	(HAPs)
	PM	PM_{10}	$PM_{2.5}$*	HCl***	HCl
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Furnace Line 1	12.65	16.55	16.55	6.00	7.72
Furnace Line 2	12.65	16.55	16.55	6.00	
***Salt Furnace	1.48	1.48	1.48	1.68E-05	1.96
Total	**26.78**	**34.58**	**34.58**	**11.99**	**9.68**

Methodology:
PM/PM10/PM2.5/HCl Uncontrolled PTE (tons/yr) = Maximum Throughput (lb/hr) x Emission Factor (lb/lb) x 8,760 (hrs/yr) / 2000 (lbs/ton)
***Salt Furnace HCl Uncontrolled PTE (tons/yr) = Maximum Throughput (lb of salt/hr) / 2000 (lbs/ton) x Emission Factor (lb/ton) x 8,760 (hrs/yr) / 2000 (lbs/ton)
HCl Limited PTE (tons/yr) = Limited Throughput (lb of salt/yr) x Limited Emission Factor (lb/ton of salt) / 2000 (lbs/ton)

Appendix A: Emission Calculations
Pouring/Casting Process

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Emission Unit Description	Maximum Throughput lb/hr	Maximum Throughput tons/hr	Emission Factors SO2 (lb/ton of metal charged)	Emission Factors NOx (lb/ton of metal charged)	Emission Factors VOC (lb/ton of metal charged)	Potential Emissions SO2 (ton/yr)	Potential Emissions NOx (ton/yr)	Potential Emissions VOC (ton/yr)
Ingot Pouring/Casting	10,000	5.00	0.02	0.01	0.14	**0.44**	**0.22**	**3.07**

Note: Emission factors are from FIRE version 6.24 (March 2004). SCC # 3-04-001-14 [Secondary Aluminum Production (Pouring and Casting)].

Methodology:
Potential Emissions (ton/yr) = Emission Factor (lb/ton) x throughput (ton/hr) x 8760 (hr/yr) / 2000 (lb/ton)

Appendix A: Emission Calculations
Uncontrolled Emissions
Shredder

Company Name: Advanced Magnesium Alloys Corporation
Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Potential to Emit PM, PM10 and PM2.5
The following calculations determine the amount of emissions created by the Shredder.

Emission Unit	Throughput (tons/hr)	Controlled PM Emission Factor* (lbs/ton)	Unontrolled PM Emission Factor* (lbs/ton)	Uncontrolled	
				Particulate Emissions (lbs/hr)	Particulate Emissions (tons/yr)
Shredder	30.0	0.0232	0.232	6.96	30.48

Notes:
The particulate emission factor for the shredder is from the Institute of Scrap Recycling Industries, Inc. "Title V Applicability Workbook" Appendix D, Table D-10.G, for Mixed Scrap.

No emission factor is identified for PM10 or PM2.5 for shredding, therefore it is assumed PM = PM10 = PM2.5

Methodology:
PM/PM10/PM2.5 Controlled PTE (tons/year) = Maximum Capacity (tons/hour) x Emission Factor (lbs/ton) x 8760 (hrs/year) x 1 ton/2000 lbs

Uncontrolled PTE= Controlled PTE (lb/hr) / 1-Controlled Efficiency (%)* (8760 (hrs/yr) /2000 (lbs/ton))

Appendix A Emission Calculations
Uncontrolled Emissions
Centrifuge / Compactor

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

VOC: Centrifuge / Compactor

Process Information					Uncontrolled Potential to Emit (PTE) (tons/yr)
Rate Capacity: Chips + Fluid	Rate Capacity: (Chips Only)	Rate Capacity: Cutting Fluid	Fluid Loss*	Cutting Fluid VOC Content	VOC Emissions
lb/hr	lb/hr	lb/hr	%	% by wt.	ton/yr
306.0	300.0	6.0	100%	5.5%	1.45

Notes:
Machine chips not produced on-site. Obtained wet (w/ cutting fluid), then centrifuged and compacted.
*Cutting fluid is collected in drums, with an estimated loss of 2%; however, VOC emissions are conservatively calculated with 100% expression.
Chip compaction: VOC emission accounted for at centrifuge.
Particulate emissions are negligible. (Metal is oil wet. No high speed cutting or shearing)
Emissions provided by source. Based on mfr's. information from mass balance weighing.

Methodology:
Assumption: VOC content modeled on *CRC True Tap HD Cutting Fluid* - [s.g. = 1.108, VOC = < 0.5 lb/gal]; (= < 5.5% by wt.)
VOC emissions = (Fluid Rate)(lb/hr) x (Loss)(%) x (VOC Content)(%) * (8760)(hr/yr) x (1/2000)(ton/lb) = ton/yr

Appendix A Emission Calculations
Uncontrolled Emissions
Conveyors

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Emission Units	Maximum Throughput lb of magnesium/hr	Maximum Throughput ton of magnesium/hr	Emission Factors (EF) PM lb/ton	Emission Factors (EF) $PM_{10}/PM_{2.5}$* lb/ton
Two (2) Casting Conveyors	21,120	11	0.01	0.004
Two (2) Cooling Conveyors	21,120	11	0.01	0.004
Four (4) Heater Feed Conveyor	42,240	21	0.01	0.004
Shredder Feed Conveyor	60,000	30	0.01	0.004
Shredder Discharge Conveyor	60,000	30	0.01	0.004
Tramp Iron Removal Discharge Conveyor	60,000	30	0.01	0.004
Shuttle Conveyor	60,000	30	0.01	0.004

Emission Units	Maximum Throughput lbs of salt/hr	Maximum Throughput ton of salt/hr	Emission Factors (EF) PM lb/ton	Emission Factors (EF) $PM_{10}/PM_{2.5}$* lb/ton
Salt Loading Hopper	1,000	0.5	0.0048	0.0028

Emission Units	Uncontrolled Potential to Emit (PTE) (tons/yr) (PM and Criteria Pollutants) PM tons/yr	PM_{10} tons/yr	$PM_{2.5*}$ tons/yr
Two (2) Casting Conveyors	0.46	0.19	0.19
Two (2) Cooling Conveyors	0.46	0.19	0.19
Four (4) Heater Feed Conveyor	0.93	0.37	0.37
Shredder Feed Conveyor	1.31	0.53	0.53
Shredder Discharge Conveyor	1.31	0.53	0.53
Tramp Iron Removal Discharge Conveyor	1.31	0.53	0.53
Shuttle Conveyor	1.31	0.53	0.53
Salt Loading Hopper	0.01	0.01	0.01
Total	**7.12**	**2.85**	**2.85**

Notes:
*PM2.5 = PM10
Emission factors from AP-42 Table 11.24-2.
Salt Hopper emission factors from AP-42 Table 11.12.2

Methodology:
Uncontrolled PTE (tons/yr) = Maximum Throughput (lb/hr)/2000 (lbs/ton) x Emission Factor (lb/ton) x 8,760 (hrs/yr) / 2000 (lbs/ton)

Appendix A Emission Calculations
Uncontrolled Emissions
HCl Acid Tank

Company Name: Advanced Magnesium Alloys Corporation
Address City IN Zip: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Process Description - Units	Acid Tank Specifications					Emission Factor (EF)		
	Surface Area	W	L	D	Surface Area	HCl Solution	HCl Pickling Factor	Emission Rate
	(ft2)	(ft)	(ft)	(ft)	(ft^2)	(%)	(lb/(hr-ft2tank-%HCl))	(lb/hr)
HCl Tank	63	3	6	1.50	63	100.0%	0.00003	1.89E-03

Process Description - Units	Uncontrolled Potential to Emit (PTE) (tons/yr)
	HCl
	tons/yr
HCl Tank	8.28E-03

Notes:
The HCl emission factor, was derived from a report of the tests conducted by the South Coast Air Quality Management District (SCAQMD) and Metal Finishing Association of Southern California (MFASC) with collaboration by the California Air Resource Board (CARB).

Acid tank is used to dissolve magnesium deposits stuck in pipes and pumps for re-use.

Methodology:
Surface Area (ft^2) = 2[(Length x Width) + (Width x Depth) + (Length x Depth)]
HCl Uncontrolled Potential to Emit (PTE) (tons/yr) = Emission Factor (lb/(hr-ft^2tank-%HCl)) x Surface Area (ft^2)* HCl Solution (%) x 8760 hr/yr x 1 ton/2000 lbs

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

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Units	Number of Units*	Total Heat Input Capacity (MMBtu/hr)
Space Heaters (5)	5	8.00
Tool Heaters (2)	2	1.00
Mold Heaters (2)	2	0.40
Totals		**9.40**

Heat Input Capacity MMBtu/hr	HHV mmBtu / mmscf	Potential Throughput MMCF/yr
9.4	1020	80.7

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.08	0.31	0.31	0.02	4.04	0.22	3.39

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 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
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
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	8.5E-05	4.8E-05	3.0E-03	0.07	1.4E-04	**0.08**

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	2.0E-05	4.4E-05	5.7E-05	1.5E-05	8.5E-05	**2.2E-04**
					Total HAPs	**0.08**
					Worst HAP	**0.07**

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

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Advanced Magnesium Alloys Corporation
Source Address: 1820 E 32nd St, Anderson, IN 46013
Permit Number: F095-41887-00114
Reviewer: Taylor Wade

Paved Roads at Industrial Site
The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Informtation (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight of Loaded Vehicle (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	21.0	1.0	21.0	40.0	840.0	2000	0.379	8.0	2903.4
Vehicle (leaving plant) (one-way trip)	21.0	1.0	21.0	15.0	315.0	2000	0.379	8.0	2903.4
		Totals	**42.0**		**1155.0**			**15.9**	**5806.8**

Average Vehicle Weight Per Trip = 27.5 tons/trip
Average Miles Per Trip = 0.38 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	27.5	27.5	27.5	tons = average vehicle weight
sL =	9.7	9.7	9.7	g/m^2 = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [1 - (p/4N)] (Equation 2 from AP-42 13.2.1)
Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]
where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	2.555	0.511	0.1255	lb/mile
Mitigated Emission Factor, Eext =	2.337	0.467	0.1147	lb/mile

Process	Mitigated PTE of PM (Before Control) (tons/yr)	Mitigated PTE of PM10 (Before Control) (tons/yr)	Mitigated PTE of PM2.5 (Before Control) (tons/yr)
Vehicle (entering plant) (one-way trip)	3.39	0.68	0.17
Vehicle (leaving plant) (one-way trip)	3.39	0.68	0.17
Totals	**6.78**	**1.36**	**0.33**

Methodology

Total Weight driven per day (ton/day)	= [Maximum Weight of Loaded Vehicle (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip)	= [Maximum one-way distance (feet/trip) / [5280 ft/mile]
Maximum one-way miles (miles/day)	= [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip)	= SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip)	= SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (Before Control) (tons/yr)	= [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (After Control) (tons/yr)	= [Mitigated PTE (Before Control) (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit

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TO: Judge Morton
Advanced Magnesium Alloys Corporation
1820 E 32nd St
Anderson IN 46013

DATE: July 17, 2020

FROM: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
FESOP Renewal
095-41887-00114

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Arie Shaked ADVANCED MAGNESIUM ALLOYS CORPORATION AMACOR 1820 E 32nd St Anderson IN 46013 (RO CAATS)

In addition, the Notice of Decision has been sent to the OAQ Permits Branch Interested Parties List.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

July 17, 2020

TO: Anderson Public Library 111 E. 12th St. Anderson IN 46016-2701

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: **Advanced Magnesium Alloys Corporation**
Permit Number: **095-41887-00114**

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library 1/9/2017

Mail Code 61-53

IDEM Staff	LPOGOST July 17, 2020 ADVANCED MAGNESIUM ALLOYS CORPORATION 095-41887-00114 final		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Judge Morton Advanced Magnesium Alloys Corporation 1820 E 32nd St Anderson IN 46013 (Source CAATS) VIA UPS									
2		Arie Shaked ADVANCED MAGNESIUM ALLOYS CORPORATION AMACOR 1820 E 32nd St Anderson IN 46013 *(RO CAATS)*									
3		Madison County Commissioners 16 E. 9th Suite 104 Anderson IN 46016 *(Local Official)*									
4		Anderson Public Library 111 E. 12th St. Anderson IN 46016-2701 *(Library)*									
5		Anderson Town Council & Mayors Office P.O. Box 2100 Anderson IN 46018 *(Local Official)*									
6		Madison County Health Department 206 E 9th St Anderson IN 46016-1512 *(Health Department)*									
7		Scott Underwood The Herald Bulletin 1133 Jackson St Anderson IN 46016 *(Affected Party)*									
8		Scott Slade The Times-Post 104 W High St Pendleton IN 46064 *(Affected Party)*									
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