



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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**Michael R. Pence**  
Governor

**Thomas W. Easterly**  
Commissioner

To: Interested Parties

Date: May 15, 2014

From: Matthew Stuckey, Chief  
Permits Branch  
Office of Air Quality

Source Name: CLM Pallet Recycling, Inc.

Permit Level: First Minor Permit Revision to FESOP

Permit Number: 059-34402-00037

Source Location: 3103 W 1000 N, Fortville, IN 46040

Type of Action Taken: Modification at an existing source

## 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, select Search option 3, then enter permit 5 digit permit # XXXXX.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201  
100 North Senate Avenue, MC 50-07  
Indianapolis, IN 46204  
Phone: 1-800-451-6027 (ext. 4-0965)  
Fax (317) 232-8659

Pursuant to IC 13-17-3-4 and 326 IAC 2, this approval is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

*(continues on next page)*

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 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 Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, 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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Commissioner

Mark Loughery  
CLM Pallet Recycling, Inc.  
3103 W 1000 N  
Fortville, IN 46040

May 15, 2014

Re: 059-34402-00037  
First Minor Revision to  
F059-29179-00037

Dear Mr. Loughery:

CLM Pallet Recycling, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) No. F059-29179-00037 on September 22, 2010 for a stationary wood pallet recycling operation located at 3103 W 1000 N, Fortville, Indiana 46040. On April 8, 2014, the Office of Air Quality (OAQ) received an application from CLM Pallet Recycling, Inc. relating to the construction and operation of one (1) diesel storage tank, two (2) carbon crushers, and four (4) carbon pulverizers. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Minor Permit Revision (MPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a minor permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the minor permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Brian Wright of my staff at 317-234-6544 or 1-800-451-6027, and ask for extension 4-6544.

Sincerely,

Nathan C. Bell, Section Chief  
Permits Branch  
Office of Air Quality

Attachments: Technical Support Document and revised permit

NB/BW

cc: File - Hancock County  
Hancock County Health Department  
U.S. EPA, Region V  
Compliance and Enforcement Branch



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Commissioner

Federally Enforceable State Operating Permit  
OFFICE OF AIR QUALITY

CLM Pallet Recycling, Inc.  
3103 W 1000 N  
Fortville, Indiana 46040

(herein known as the Permittee) is hereby authorized to construct and 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. F059-29179-00037	
Original Issued/Signed by: Alfred C. Dumauual, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: September 22, 2010  Expiration Date: September 22, 2015

Significant Permit Revision No. 059-33390-00037, issued on November 18, 2013.

Minor Permit Revision No. 059-34402-00037	
Issued by:  Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: May 15, 2014  Expiration Date: September 22, 2015

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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 wood pallet recycling operation and wood gasification operation.

Source Address:	3103 W 1000 N, Fortville, Indiana 46040
General Source Phone Number:	(317) 485-4080
SIC Code:	2448
County Location:	Hancock
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 Not 1 of 28 Source Categories

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

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

- (a) Two (2) Wood Burning Shop Heaters, identified as E 1 and E 2, constructed in 2009, with a maximum heat rate of 1.017 MMBtu/hr each, and exhausting to stack S 1 and S 2 respectively;

Note: The Permittee will only combust clean wood in the wood-fired shop heaters. Clean wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean wood does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

- (b) One (1) Kiln, identified as K 1, constructed in 2006, with a maximum capacity to heat treat 6,484 feet of wood every 4 hours, utilizing four (4) natural gas heaters, constructed in 2006, with maximum heat rate of 1.6 MMBtu/hr each and exhausting to stacks V1 and V2;
- (c) One (1) diesel storage tanks, constructed in 2006, with a maximum capacity of 550 gallons;
- (d) One (1) diesel storage tank, constructed in 2013, with a maximum capacity of 500 gallons.
- (e) One (1) material storage pile, with a maximum throughput of 72,000 pounds of ground wood per hour on 5 acres.
- (f) One (1) tub grinder, identified as E3, approved for construction in 2013, with a maximum capacity of 75,000 pounds of wood per hour, powered by a non-road diesel engine (E3) with a 540 horsepower capacity.

- (g) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of two (2) tons of wood per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 9 MMBtu/hr, with hot gas exhaust used for drying wood in the kilns and for building heat.
  - (3) One (1) gas-fired thermal oxidizer, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 10 MMBtu/hr.
  - (4) One (1) heat recovery steam generator with turbine, utilizing the hot gas exhaust from the thermal oxidizer to produce electricity, producing a maximum of 0.75 MW per hour of electric power, exhausting to the atmosphere.
  - (5) One (1) activated carbon product storage bin.

The wood gasification/cogeneration units are affected units under the provisions of 40 CFR 60, Subpart Dc.

Note: The Permittee will not gasify, combust, or treat municipal waste or hazardous waste in the wood gasification/cogeneration units. The Permittee will only gasify clean pallet wood and/or untreated pallet wood painted with blue latex paint in the wood gasification/cogeneration units. Clean pallet wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean pallet wood and untreated pallet wood painted with blue latex paint does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

- (h) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of 50 pounds of wood products per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 0.25 MMBtu/hr.
  - (3) One (1) flare, equipped with a natural gas-fired pilot flame with a maximum heat input capacity of 0.5 MMBtu/hr.
  - (4) One (1) activated carbon product storage bin.

- (i) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).

This diesel engine is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

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) Two (2) carbon crushers, identified as C1 and C2, approved in 2014 for construction, each with a maximum capacity of 1.33 tons per hour, using baghouses BC1 and BC2 as control, and exhausting indoors.
- (b) Four (4) carbon pulverizers, identified as P1 through P4, approved in 2014 for construction, each with a maximum capacity of 0.667 tons per hour, using baghouses BP1 through BP4 as control, and exhausting indoors.

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

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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) for a Federally Enforceable State Operating Permit (FESOP).

## **SECTION B GENERAL CONDITIONS**

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

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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 Revocation of Permits [326 IAC 2-1.1-9(5)]**

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

### **B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]**

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This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 when the following requirements are met:

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as described in the application or the permit. The emission units covered in this permit may continue operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as described.
- (b) If actual construction of the emission units differs from the construction described in the application, the source may not continue operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.
- (c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

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

- 
- (a) This permit, F059-29179-00037, is issued for a fixed term of five (5) 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.5 Term of Conditions [326 IAC 2-1.1-9.5]**

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

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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.7 Severability [326 IAC 2-8-4(4)]**

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

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

**B.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]**

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

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

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- (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. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent 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.12 Compliance Order Issuance [326 IAC 2-8-5(b)]**

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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.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]**

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- (a) If required by specific condition(s) in Section D of this permit, 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.

- (b) 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).
- (c) 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.14 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 a health-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.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to F059-29179-00037 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.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]**

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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.17 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]

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

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- (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(40). 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.19 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.20 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) through (d) 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 V  
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) through (d). 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)(2), (c)(1), and (d).

- (b) Emission Trades [326 IAC 2-8-15(c)]  
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(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]  
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.21 Source Modification Requirement [326 IAC 2-8-11.1]**

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

**B.22 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]**

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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.23 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.24 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 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 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]**

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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]**

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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]**

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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 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]**

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Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the attached plan as in Attachment A.

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

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- (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(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

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]**

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- (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]**

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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][326 IAC 2-8-5(a)(1)]**

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

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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 or of initial start-up, whichever is later, 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 or the date of initial startup, whichever is later, 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).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

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

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- (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.
- (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]**

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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]**

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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. 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]**

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- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. 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) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. 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**

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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:

- (g) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of two (2) tons of wood per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 9 MMBtu/hr, with hot gas exhaust used for drying wood in the kilns and for building heat.
  - (3) One (1) gas-fired thermal oxidizer, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 10 MMBtu/hr.
  - (4) One (1) heat recovery steam generator with turbine, utilizing the hot gas exhaust from the thermal oxidizer to produce electricity, producing a maximum of 0.75 MW per hour of electric power, exhausting to the atmosphere.
  - (5) One (1) activated carbon product storage bin.  
The wood gasification/cogeneration units are affected units under the provisions of 40 CFR 60, Subpart Dc.
- Note: The Permittee will not gasify, combust, or treat municipal waste or hazardous waste in the wood gasification/cogeneration units. The Permittee will only gasify clean pallet wood and/or untreated pallet wood painted with blue latex paint in the wood gasification/cogeneration units. Clean pallet wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean pallet wood and untreated pallet wood painted with blue latex paint does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).
- (h) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of 50 pounds of wood products per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 0.25 MMBtu/hr.
  - (3) One (1) flare, equipped with a natural gas-fired pilot flame with a maximum heat input capacity of 0.5 MMBtu/hr.
  - (4) One (1) activated carbon product storage bin.

(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 PSD Minor Limits [326 IAC 2-2] [326 IAC 2-8-4]**

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, VOC, CO, and HAP emissions from each of the wood gasification/cogeneration units and the laboratory unit shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Combustion Device	VOC Emission Limit (lbs/hr)	CO Emission Limit (lbs/hr)	Each Single HAP Emission Limit (lbs/hr)	Total HAP Emission Limit (lbs/hr)
E4	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E5	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E6	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E7	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
L1	Laboratory Unit	Flare	4.27	2.89	0.43	1.05

Compliance with these limits, combined with the potential to emit VOC, CO, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC and CO to less than 100 tons per 12 consecutive month period, any single HAP to less than ten (10) tons per 12 consecutive month period, and total HAPs to less than twenty-five (25) tons per 12 consecutive month period, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

**D.1.2 VOC Limits [326 IAC 8-1-6]**

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable to each of the four (4) wood gasification/cogeneration units (E4 through E7), VOC emissions from each of the wood gasification units (E4 through E7) shall be less than 5.70 pounds per hour (after the thermal oxidizer).

Compliance with these limits shall render the requirements of 326 IAC 8-1-6 (New Facilities; VOC Reduction Requirements) not applicable.

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

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

**Compliance Determination Requirements**

**D.1.4 Emissions Control**

In order to comply with Conditions D.1.1 and D.1.2, each of the following combustion devices shall be in operation at all times that the associated gasification unit, as listed in the table below, is in operation:

Unit ID	Unit Description	Combustion Device
E4	Gasification Unit	Thermal Oxidizer
E5	Gasification Unit	Thermal Oxidizer
E6	Gasification Unit	Thermal Oxidizer
E7	Gasification Unit	Thermal Oxidizer
L1	Laboratory Unit	Flare

**D.1.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

Not later than one hundred and eighty (180) days after initial startup of one (1) or more of the four (4) wood gasification/cogeneration units (E4 through E7), in order to demonstrate compliance with Conditions D.1.1 and D.1.2, the Permittee shall perform VOC, CO, and HAP (1,3-Butadiene, Formaldehyde, Acetaldehyde, Acrolein, Benzene, Hexane, Hydrogen Chloride, and Styrene) testing for one (1) of the emission units within each Group for Group 1 and Group 2 as specified in the following table, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing of any individual emission unit within a group shall not be repeated until each emission unit within the group has been tested. In addition to these requirements, IDEM may require compliance testing when necessary to determine if these facilities are in compliance. 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.

EMISSION UNIT GROUPINGS			
Group	Emission Unit ID	Emission Unit Description	Combustion Device
Group 1	E4	Gasification Unit	Thermal Oxidizer
	E5	Gasification Unit	Thermal Oxidizer
Group 2	E6	Gasification Unit	Thermal Oxidizer
	E7	Gasification Unit	Thermal Oxidizer

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

**D.1.6 Thermal Oxidizer Temperature**

- (a) A continuous monitoring system shall be calibrated and maintained on each of the four (4) thermal oxidizers (E4 through E7) for measuring operating temperature. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,400°F.
- (b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.1.1 and D.1.2.
- (c) On and after the date the stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test. When, for any one reading, the 3-hour average temperature falls below the temperature listed above or the average temperature established during the latest stack test, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A 3-hour temperature that falls below the above mentioned temperature is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

**D.1.7 Parametric Monitoring**

- (a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in Conditions D.1.1 and D.1.2.
- (b) The duct pressure or fan amperage shall be observed and recorded at least once per day when the thermal oxidizers are in operation. On and after the date the stack test results are available, the duct pressure or fan amperage shall be maintained within the normal

range as established in most recent compliant stack test. When, for any one reading, the duct pressure or fan amperage is outside the appropriate range established during the latest stack test, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A duct pressure or fan amperage reading that is outside the above mentioned range is not a deviation from this permit. 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.1.8 Record Keeping Requirements**

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- (a) To document compliance with Conditions D.1.6 and D.1.7, the Permittee shall maintain records on each of the four (4) thermal oxidizers (E4 through E7) in accordance with the following:
  - (1) The continuous temperature records (on a 3-hour average basis) for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a temperature reading is not taken and the reason for the lack of temperature reading (e.g., the thermal oxidizer was not operating).
  - (2) Daily records of the duct pressure or fan amperage. The Permittee shall include in its daily record when a pressure or fan amperage reading is not taken and the reason for the lack of pressure or fan amperage reading (e.g., the thermal oxidizer was not operating).
- (b) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (g) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of two (2) tons of wood per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 9 MMBtu/hr, with hot gas exhaust used for drying wood in the kilns and for building heat.
  - (3) One (1) gas-fired thermal oxidizer, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 10 MMBtu/hr.
  - (4) One (1) heat recovery steam generator with turbine, utilizing the hot gas exhaust from the thermal oxidizer to produce electricity, producing a maximum of 0.75 MW per hour of electric power, exhausting to the atmosphere.
  - (5) One (1) activated carbon product storage bin.  
The wood gasification/cogeneration units are affected units under the provisions of 40 CFR 60, Subpart Dc.

Note: The Permittee will not gasify, combust, or treat municipal waste or hazardous waste in the wood gasification/cogeneration units. The Permittee will only gasify clean pallet wood and/or untreated pallet wood painted with blue latex paint in the wood gasification/cogeneration units. Clean pallet wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean pallet wood and untreated pallet wood painted with blue latex paint does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

- (h) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of 50 pounds of wood products per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 0.25 MMBtu/hr.
  - (3) One (1) flare, equipped with a natural gas-fired pilot flame with a maximum heat input capacity of 0.5 MMBtu/hr.
  - (4) One (1) activated carbon product storage bin.

(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 (PM) [326 IAC 6-2-4]

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- (a) Pursuant to 326 IAC 6-2-4, the particulate emissions from the laboratory wood gasification unit shall not exceed 0.6 pounds per million British thermal units (lb/MMBtu) heat input
  
- (b) Pursuant to 326 IAC 6-2-4, the particulate emissions from each of the wood gasification units (E4 through E7) shall not exceed 0.35 pounds per million British thermal units (lb/MMBtu) heat input. The pound per hour limitations were calculated using the following equation:

$$Pt = 1.09/Q^{0.26}$$

where: Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input; and

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. (Q = 76.25 MMBtu/hr)

## SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (g) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:
- (1) One (1) starved-air wood gasification tank, with a maximum throughput of two (2) tons of wood per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 9 MMBtu/hr, with hot gas exhaust used for drying wood in the kilns and for building heat.
  - (3) One (1) gas-fired thermal oxidizer, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 10 MMBtu/hr.
  - (4) One (1) heat recovery steam generator with turbine, utilizing the hot gas exhaust from the thermal oxidizer to produce electricity, producing a maximum of 0.75 MW per hour of electric power, exhausting to the atmosphere.
  - (5) One (1) activated carbon product storage bin.

The wood gasification/cogeneration units are affected units under the provisions of 40 CFR 60, Subpart Dc.

Note: The Permittee will not gasify, combust, or treat municipal waste or hazardous waste in the wood gasification/cogeneration units. The Permittee will only gasify clean pallet wood and/or untreated pallet wood painted with blue latex paint in the wood gasification/cogeneration units. Clean pallet wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean pallet wood and untreated pallet wood painted with blue latex paint does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

(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)]

#### E.1.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

Pursuant to 40 CFR 60.4246, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, except when otherwise specified in 40 CFR Part 60, Subpart Dc.

#### E.1.2 New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Dc] [326 IAC 12]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart Dc (included as Attachment B of this permit), which are incorporated by reference in 326 IAC 12, for the four (4) wood gasification units (E4 through E7):

- (1) 40 CFR 60.40c(a)
- (2) 40 CFR 60.41c
- (3) 40 CFR 60.48c(a), (g)(1)-(3), (i), and (j)

## SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (i) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).

This diesel engine is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

(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)]

#### E.2.1 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

Pursuant to 40 CFR 60.4246, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, except when otherwise specified in 40 CFR Part 60, Subpart IIII.

#### E.2.2 New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines [40 CFR 60, Subpart IIII] [326 IAC 12]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart IIII (included as Attachment C of this permit), which are incorporated by reference in 326 IAC 12, for the one (1) diesel-fired generator:

- (1) 40 CFR 60.4200
- (2) 40 CFR 60.4201(a)
- (3) 40 CFR 60.4204(b)
- (4) 40 CFR 60.4206
- (5) 40 CFR 60.4207(a), (b)
- (6) 40 CFR 60.4209
- (7) 40 CFR 60.4211(a), (c), (g)
- (8) 40 CFR 60.4212
- (9) 40 CFR 60.4214
- (10) 40 CFR 60.4218
- (11) 40 CFR 60.4219
- (12) Table 8

### SECTION E.3

### OPERATION CONDITIONS

#### Emissions Unit Description

- (i) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).

This diesel engine is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

(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)]

- E.3.1 National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

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The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment D of this permit), which are incorporated by reference as 326 IAC 20-82, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ, for the one (1) diesel-fired generator:

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(2)(iii) and (c)(1)
- (4) 40 CFR 63.6595(a)(7)
- (5) 40 CFR 63.6665
- (6) 40 CFR 63.6670
- (7) 40 CFR 63.6675

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

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
CERTIFICATION**

Source Name: CLM Pallet Recycling, Inc.  
Source Address: 3103 W 1000 N, Fortville, Indiana 46040  
FESOP Permit No.: F059-29179-00037

**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: CLM Pallet Recycling, Inc.  
Source Address: 3103 W 1000 N, Fortville, Indiana 46040  
FESOP Permit No.: F059-29179-00037

**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) 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 2-7-16

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 Describe:
Type of Pollutants Emitted: TSP, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , 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  
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: CLM Pallet Recycling, Inc.  
Source Address: 3103 W 1000 N, Fortville, Indiana 46040  
FESOP Permit No.: F059-29179-00037

Months: \_\_\_\_\_ to \_\_\_\_\_ Year: \_\_\_\_\_

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. 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".</p>	
<p><input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.</p>	
<p><input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD</p>	
<p><b>Permit Requirement</b> (specify permit condition #)</p>	
<p><b>Date of Deviation:</b></p>	<p><b>Duration of Deviation:</b></p>
<p><b>Number of Deviations:</b></p>	
<p><b>Probable Cause of Deviation:</b></p>	
<p><b>Response Steps Taken:</b></p>	
<p><b>Permit Requirement</b> (specify permit condition #)</p>	
<p><b>Date of Deviation:</b></p>	<p><b>Duration of Deviation:</b></p>
<p><b>Number of Deviations:</b></p>	
<p><b>Probable Cause of Deviation:</b></p>	
<p><b>Response Steps Taken:</b></p>	

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

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

CLM Pallet Recycling, Inc.  
3103 W 1000 N  
Fortville, Indiana 46040

Affidavit of Construction

I, \_\_\_\_\_, being duly sworn upon my oath, depose and say:  
(Name of the Authorized Representative)

1. I live in \_\_\_\_\_ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of \_\_\_\_\_ for \_\_\_\_\_.  
(Title) (Company Name)
3. By virtue of my position with \_\_\_\_\_, I have personal  
(Company Name)  
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of \_\_\_\_\_.  
(Company Name)
4. I hereby certify that CLM Pallet Recycling, Inc. 3103 W 1000 N, Fortville, Indiana 46040, has constructed and will operated a wood pallet recycling operation in conformity with the requirements and intent of the permit application received by the Office of Air Quality on April 19, 2010 and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F059-29179-00037, Plant ID No. 059-00037 issued on \_\_\_\_\_.
5. **Permittee, please cross out the following statement if it does not apply:** Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature \_\_\_\_\_  
Date \_\_\_\_\_

STATE OF INDIANA)  
)SS

COUNTY OF \_\_\_\_\_ )

Subscribed and sworn to me, a notary public in and for \_\_\_\_\_ County and State of Indiana  
on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_. My Commission expires: \_\_\_\_\_.

Signature \_\_\_\_\_  
Name \_\_\_\_\_ (typed or printed)

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a Minor Permit Revision (MPR) to a  
Federally Enforceable State Operating Permit (FESOP)

**Source Description and Location**

**Source Name:** CLM Pallet Recycling, Inc.  
**Source Location:** 3103 W 1000 N, Fortville, Indiana 46040  
**County:** Hancock  
**SIC Code:** 2448 (Wood pallets and skids) **Operation Permit No.:** F059-29179-00037  
**Operation Permit Issuance Date:** September 22, 2010  
**MPR No.:** 059-34402-00037  
**Permit Reviewer:** Brian Wright

On April 8, 2014, the Office of Air Quality (OAQ) received an application from CLM Pallet Recycling, Inc. related to a modification to an existing stationary wood pallet recycling operation and wood gasification operation.

**Existing Approvals**

The source was issued FESOP No. F059-29179-00037 on September 22, 2010. The source has since received Significant Permit Revision No. 059-33390-000, issued on November 18, 2013.

**County Attainment Status**

The source is located in Hancock County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. <sup>1</sup>
PM <sub>2.5</sub>	Unclassifiable or attainment effective April 5, 2005, for the annual PM <sub>2.5</sub> standard.
PM <sub>2.5</sub>	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM <sub>2.5</sub> standard.
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

<sup>1</sup>Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

- (a) **Ozone Standards**  
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) 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<sub>x</sub> emissions are considered when evaluating the rule applicability relating to ozone. Hancock County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM<sub>2.5</sub>**  
 Hancock County has been classified as attainment for PM<sub>2.5</sub>. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM<sub>2.5</sub> emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct PM<sub>2.5</sub> significant level at ten (10) tons per year. This rule became effective June 28, 2011. Therefore, direct PM<sub>2.5</sub>, SO<sub>2</sub>, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**  
 Hancock County has been classified as attainment or unclassifiable in Indiana for all 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 type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

**Status of the Existing Source**

The table below summarizes the potential to emit of the entire source, prior to the proposed revision, after consideration of all enforceable limits established in the effective permits:

This PTE table is from the TSD of SPR No. 059-33390-00037, issued on November 18, 2013.

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10*	PM2.5*	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Wood-Fired Shop Heaters (E1 and E2)	3.56	3.36	2.91	0.22	4.37	0.12	5.35	49	0.30	0.17 HCl
Kiln K1 with Natural Gas Kiln Heaters (worst case)	0.05	0.30	0.30	0.02	2.75	1.51	2.31	3,318	0.13	0.05
Diesel Generator	0.10	0.10	0.10	0.10	1.46	0.12	0.31	54	1.3E-3	3.9E-4 Formaldehyde
Gasification Tank Heaters (worst case)	0.35	1.21	1.21	1.74	22.56	1.74	13.08	22,182	0.29	0.28 Hexane
Thermal Oxidizers (worst case)	0.38	1.34	1.34	1.91	24.89	1.91	14.43	24,477	0.32	0.31 Hexane
Laboratory Unit (L1) Flare (natural gas pilot)	4.1E-3	0.02	0.02	1.3E-3	0.21	0.01	0.18	259	4.1E-3	1.6E-4 Hexane
Laboratory Unit (L1) (biogas)	0.02	0.02	0.02	0.0	0.06	18.70	12.66	126	4.60	1.88 each Single HAP
Wood Gasification Units (Incomplete Oxidizer Combustion of Biogas)	0.0	0.0	0.0	0.0	0.0	74.81	50.63	0.0	18.40	7.53 each Single HAP
<b>Total PTE of Entire Source</b>	<b>4.48</b>	<b>6.35</b>	<b>5.91</b>	<b>3.99</b>	<b>56.29</b>	<b>98.91</b>	<b>98.94</b>	<b>50,465</b>	<b>24.05</b>	<b>9.42 each Single HAP</b>

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10*	PM2.5*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	NA	NA
Fugitive Emissions	28.86	21.76	20.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0

HCl = Hydrogen Chloride  
 \*Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".  
 \*\*The 100,000 CO<sub>2</sub>e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

- (a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
- (b) This existing source is not a major stationary source under Emission Offset (326 IAC 2-3), because no nonattainment regulated pollutant is emitted at a rate of 100 tons per year or more.
- (c) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the Permittee has accepted limits on HAPs emissions to 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).

**Description of Proposed Revision**

The Office of Air Quality (OAQ) has reviewed an application, submitted by CLM Pallet Recycling, Inc. on April 8, 2014, relating to the construction two (2) crushers and four (4) jet pulverizers for the purpose of processing the carbon materials produced in the gasification process for reuse.

The following is a list of the new emission units and pollution control devices:

- (a) One (1) diesel storage tank, constructed in 2013, with a maximum capacity of 500 gallons.
- (b) Two (2) carbon crushers, identified as C1 and C2, approved in 2014 for construction, each with a maximum capacity of 1.33 tons per hour, using baghouses BC1 and BC2 as control, and exhausting indoors.
- (c) Four (4) carbon pulverizers, identified as P1 through P4, approved in 2014 for construction, each with a maximum capacity of 0.667 tons per hour, using baghouses BP1 through BP4 as control, and exhausting indoors.

**Enforcement Issues**

There are no pending enforcement actions related to this revision.

**Process Bottleneck**

Based on information provided by the source, the wood gasification units (E4, E5, E6, and E7) are the bottleneck in the carbon processing operation, because all of the carbon material used is produced by the

gasifiers. Gasifiers E4, E5, E6, and E7 each have a maximum throughput of 2 tons per hour of wood material. Approximately 33.33% percent of the wood material is converted into carbon chips by the gasification process. Assuming the gasifiers are operated 8,760 hours per year, the maximum carbon output capacity is 23,358 tons per year for the two (2) crushers (combined) and the four (4) pulverizers (combined). The potential to emit for the carbon crushers and pulverizers was calculated based on the bottleneck throughput of 23,358 tons per year for the gasifiers.

**Emission Calculations**

See Appendix A of this TSD for detailed emission calculations.

**Permit Level Determination – FESOP Revision**

The following table is used to determine the appropriate permit level under 326 IAC 2-8.11.1. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs	Worst Single HAP
Carbon Crushers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon Pulverizers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total PTE of Proposed Revision</b>	<b>7.00</b>	<b>1.68</b>	<b>1.68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Pursuant to 326 IAC 2-8-11.1(d), this FESOP is being revised through a FESOP Minor Permit Revision because the proposed revision involves the construction of new emission units with potential to emit (PTE) less than twenty-five (25) tons per year and equal to or greater than five (5) tons per year of either PM, PM<sub>10</sub>, or direct PM<sub>2.5</sub>.

**PTE of the Entire Source After Issuance of the FESOP Revision**

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

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10*	PM2.5*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Wood-Fired Shop Heaters (E1 and E2)	3.56	3.36	2.91	0.22	4.37	0.12	5.35	49	0.30	0.17 HCl
Kiln K1 with Natural Gas Kiln Heaters (worst case)	0.05	0.30	0.30	0.02	2.75	1.51	2.31	3,318	0.13	0.05
Diesel Generator	0.10	0.10	0.10	0.10	1.46	0.12	0.31	54	1.3E-3	3.9E-4 Formaldehyde
Gasification Tank Heaters (worst case)	0.35	1.21	1.21	1.74	22.56	1.74	13.08	22,182	0.29	0.28 Hexane
Thermal Oxidizers (worst case)	0.38	1.34	1.34	1.91	24.89	1.91	14.43	24,477	0.32	0.31 Hexane

Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10*	PM2.5*	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	GHGs as CO <sub>2</sub> e**	Total HAPs	Worst Single HAP
Laboratory Unit (L1) Flare (natural gas pilot)	4.1E-3	0.02	0.02	1.3E-3	0.21	0.01	0.18	259	4.1E-3	1.6E-4 Hexane
Laboratory Unit (L1) (biogas)	0.02	0.02	0.02	0.0	0.06	18.70	12.66	126	4.60	1.88 each Single HAP
Wood Gasification Units (Incomplete Oxidizer Combustion of Biogas)	0.0	0.0	0.0	0.0	0.0	74.81	50.63	0.0	18.40	7.53 each Single HAP
Carbon Crushers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carbon Pulverizers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total PTE of Entire Source</b>	<b>11.49</b>	<b>8.03</b>	<b>7.59</b>	<b>3.99</b>	<b>56.29</b>	<b>98.91</b>	<b>98.94</b>	<b>50,465</b>	<b>24.05</b>	<b>9.42 each Single HAP</b>
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	NA	NA
Fugitive Emissions	28.86	21.76	20.44	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HCl = Hydrogen Chloride *Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant". **The 100,000 CO <sub>2</sub> e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.										

(a) FESOP Status

This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable and pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following:

VOC, CO, and HAP emissions from each of the wood gasification units and the laboratory unit shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Combustion Device	VOC Emission Limit (lbs/hr)	CO Emission Limit (lbs/hr)	Each Single HAP Emission Limit (lbs/hr)	Total HAP Emission Limit (lbs/hr)
E4	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E5	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E6	Gasification Unit	Thermal Oxidizer	4.27	2.89	0.43	1.05
E7	Gasification	Thermal	4.27	2.89	0.43	1.05

	Unit	Oxidizer				
L1	Laboratory Unit	Flare	4.27	2.89	0.43	1.05

Compliance with these limits, combined with the potential to emit VOC, CO, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC and CO to less than 100 tons per 12 consecutive month period, any single HAP to less than ten (10) tons per 12 consecutive month period, and total HAPs to less than twenty-five (25) tons per 12 consecutive month period, and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP) not applicable.

**Federal Rule Applicability Determination**

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 (60.110b through 60.117b) (326 IAC 12), are not included in the permit, since the 500 gallon diesel storage tank has a storage capacity of less than 75,000 liters (19,813 gallons).
- (b) The requirements of the New Source Performance Standard for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO (326 IAC 12), are not included for this proposed revision, since the carbon crushers (C1 and C2) and carbon pulverizers (P1 through P4) do not process nonmetallic minerals as defined by 40 CFR 60.671.
- (c) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed revision.

Compliance Assurance Monitoring (CAM)

- (e) 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 Determination**

The following state rules are applicable to the proposed revision:

- (a) 326 IAC 2-8-4 (FESOP)  
 This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))  
 This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source

will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.

- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))  
The proposed revision is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the each of the new units is 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.
- (d) 326 IAC 2-6 (Emission Reporting)  
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (e) 326 IAC 5-1 (Opacity Limitations)  
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
  - (1) 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.
  - (2) 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.
- (f) 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.
- (g) 326 IAC 12 (New Source Performance Standards)  
See Federal Rule Applicability Section of this TSD.
- (h) 326 IAC 20 (Hazardous Air Pollutants)  
See Federal Rule Applicability Section of this TSD.

#### Diesel Storage Tank

- (i) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)  
The 500 gallon diesel storage tank is not subject to the requirements of 326 IAC 8-4-3 since the capacity of the tank is less than thirty-nine thousand (39,000) gallons.
- (j) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)  
The 500 gallon diesel storage tank is not subject to the requirements of 326 IAC 8-9-1 since the tank is not located in Clark, Floyd, Lake, or Porter County.

#### Carbon Processing Operation

- (k) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)  
Pursuant to 326 IAC 6-3-1(b), the two (2) carbon crushers (C1 and C2) and four (4) carbon pulverizers (P1 through P4) are each not subject to the requirements of 326 IAC 6-3-2, since each unit has potential particulate emissions of less than 0.551 pounds per hour.

### Compliance Determination, Monitoring and Testing Requirements

The existing compliance requirements will not change as a result of this revision. The source shall continue to comply with the applicable requirements conditions contained in the FESOP.

### Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~strikethrough~~ text and new language appears as **bold** text:

1. Section A.2 and A.3 have been amended as follows in order to incorporate the new units:

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:

\*\*\*\*\*

- (c) **One (1)** ~~Two (2)~~ diesel storage tanks, constructed in 2006, with a maximum capacity of 550 gallons ~~and 1,000 gallons~~;
- (d) **One (1) diesel storage tank, constructed in 2013, with a maximum capacity of 500 gallons.**
- (de) One (1) material storage pile, with a maximum throughput of 72,000 pounds of ground wood per hour on 5 acres.
- (ef) One (1) tub grinder, identified as E3, approved for construction in 2013, with a maximum capacity of 75,000 pounds of wood per hour, powered by a non-road diesel engine (E3) with a 540 horsepower capacity.
- (fg) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:
  - (1) One (1) starved-air wood gasification tank, with a maximum throughput of two (2) tons of wood per hour.
  - (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 9 MMBtu/hr, with hot gas exhaust used for drying wood in the kilns and for building heat.
  - (3) One (1) gas-fired thermal oxidizer, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 10 MMBtu/hr.
  - (4) One (1) heat recovery steam generator with turbine, utilizing the hot gas exhaust from the thermal oxidizer to produce electricity, producing a maximum of 0.75 MW per hour of electric power, exhausting to the atmosphere.
  - (5) One (1) activated carbon product storage bin.

The wood gasification/cogeneration units are affected units under the provisions of 40 CFR 60, Subpart Dc.

Note: The Permittee will not gasify, combust, or treat municipal waste or hazardous

waste in the wood gasification/cogeneration units. The Permittee will only gasify clean pallet wood and/or untreated pallet wood painted with blue latex paint in the wood gasification/cogeneration units. Clean pallet wood consists of uncoated, unpainted, and untreated wood scrap, sawdust, chips, millings or shavings, and natural growth wood materials. Clean pallet wood and untreated pallet wood painted with blue latex paint does not include wood products that have been painted, pigment-stained, or pressure treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote, or manufactured wood products that contain adhesives or resins (e.g., plywood, particle board, flake board, and oriented strand board).

(gh) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:

- (1) One (1) starved-air wood gasification tank, with a maximum throughput of 50 pounds of wood products per hour.
- (2) One (1) gas-fired heater for the gasification tank, using a combination of biogas, natural gas and propane, with a maximum heat input capacity of 0.25 MMBtu/hr.
- (3) One (1) flare, equipped with a natural gas-fired pilot flame with a maximum heat input capacity of 0.5 MMBtu/hr.
- (4) One (1) activated carbon product storage bin.

(hi) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).

This diesel engine is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

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

~~This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21).~~ **This stationary source also includes the following insignificant activities:**

- (a) **Two (2) carbon crushers, identified as C1 and C2, approved in 2014 for construction, each with a maximum capacity of 1.33 tons per hour, using baghouses BC1 and BC2 as control, and exhausting indoors.**
- (b) **Four (4) carbon pulverizers, identified as P1 through P4, approved in 2014 for construction, each with a maximum capacity of 0.665 tons per hour, using baghouses BP1 through BP4 as control, and exhausting indoors.**

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (fg) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat

(cogeneration). Each unit consists of the following units:  
...  
(gh) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:  
...

...

## SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:  
(fg) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:  
...  
(gh) One (1) small research laboratory wood gasification unit, identified as L1, constructed in 2012, with a maximum throughput of 50 pounds of wood products per hour, to convert wood to biogas and activated carbon, with the biogas exhaust treated and controlled with a multi-stage water scrubber with venturi followed by a flare, with the scrubber liquid collected in a tank for research analysis. The laboratory wood gasification unit consists of the following units:  
...

...

## SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:  
(fg) Four (4) wood gasification/cogeneration units, identified as E4, E5, E6, and E7, approved for construction in 2013, each with a maximum throughput of 2 tons of wood products per hour, to convert wood pallet scrap to biogas and activated carbon, with the biogas oxidized to produce electricity and the waste heat used for drying wood in the kilns and for building heat (cogeneration). Each unit consists of the following units:  
...

...

## SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:  
(fi) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).  
...

...

SECTION E.3

OPERATION CONDITIONS

Emissions Unit Description

- (fi) One (1) diesel-fired generator, constructed and installed in 2010, with a maximum capacity of 8 kW (10.73 HP).  
...

**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 April 8, 2014

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Minor Permit Revision No. 059-34402-00037. The staff recommends to the Commissioner that this FESOP Minor Permit Revision be approved.

**IDEM Contact**

- (a) Questions regarding this proposed permit can be directed to Brian Wright at the 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) 234-6544 or toll free at 1-800-451-6027 extension 4-6544.
- (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's Guide for Citizen Participation and Permit Guide on the Internet at: [www.in.gov/idem](http://www.in.gov/idem)

Appendix A: Emission Summary

Company Name: CLM Pallet Recycling, Inc.  
 Source Address: 3103 W 1000 N, Fortville, Indiana 46040  
 Permit No: 059-34402-00037  
 Reviewer: Brian Wright  
 Date: Apr-14

Unlimited/Uncontrolled Potential to Emit

Emission Units		PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs	Worst Case HAPs	
Existing Units	Wood-Fired Shop Heaters (E1 and E2)	3.56	3.36	2.91	0.22	4.37	0.12	5.35	49	0.30	0.17	Hydrogen Chloride
	Kiln K1 with Natural Gas Kiln Heaters (worst case)*	0.05	0.30	0.30	0.02	2.75	1.51	2.31	3,318	0.13	0.05	Hexane
	Diesel Generator	0.10	0.10	0.10	0.10	1.46	0.12	0.31	54	1.3E-03	3.9E-04	Formaldehyde
	Gasification Tank Heaters (natural gas)**	0.30	1.18	1.18	0.09	15.57	0.86	13.08	18,793	0.29	0.28	Hexane
	Gasification Tank Heaters (propane)**	0.35	1.21	1.21	1.74	22.56	1.74	13.01	22,182	0.00	0.00	---
	Thermal Oxidizers (natural gas)**	0.33	1.31	1.31	0.10	17.18	0.94	14.43	20,737	0.32	0.31	Hexane
	Thermal Oxidizers (propane)**	0.38	1.34	1.34	1.91	24.89	1.91	14.36	24,477	0.00	0.00	---
	Laboratory Unit (L1) Flare (natural gas pilot)	4.1E-03	0.02	0.02	1.3E-03	0.21	0.01	0.18	259	4.1E-03	1.6E-04	Hexane
	Laboratory Unit (L1) (without flare combustion of biogas)	0.02	0.02	0.02	0.0	0.06	16.14	58.10	126	0.81	0.81	1,3-Butadiene
Wood Gasification Units (E4 through E7) (Incomplete Oxidizer Combustion of Biogas)	0.0	0.0	0.0	0.0	0.0	161.38	580.96	0.0	8.07	8.07	1,3-Butadiene	
New Units	Carbon Crushers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
	Carbon Pulverizers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
<b>Total (Non-Fugitive)</b>		<b>11.48</b>	<b>8.03</b>	<b>7.59</b>	<b>3.99</b>	<b>56.29</b>	<b>182.92</b>	<b>674.71</b>	<b>50,465</b>	<b>9.93</b>	<b>8.88</b>	<b>1,3-Butadiene</b>
Existing Units	Unpaved Roads (Fugitive)	5.88	1.17	0.12	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Paved Roads (Fugitive)	1.78	0.36	0.09	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Wood Tub Grinder (E3) (Fugitive)	3.94	3.94	3.94	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Wood Storage Piles (Fugitive)	17.26	16.29	16.29	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	<b>Total (Fugitive)</b>	<b>28.86</b>	<b>21.76</b>	<b>20.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0</b>	<b>0.00</b>	<b>0.00</b>	<b>---</b>

negl. = negligible

\*Since the kiln is stated as being a direct fired unit, the worst emissions between the kiln and the natural gas fired combustion are used.

\*\*The wood gasifiers can use either biogas, natural gas, or propane. PTE for these units based on worst case scenario for each pollutant.

Limited Potential to Emit

Emission Units		PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NOx	VOC	CO	GHGs as CO <sub>2</sub> e	Total HAPs	Worst Case HAPs	
Existing Units	Wood-Fired Shop Heaters (E1 and E2)	3.56	3.36	2.91	0.22	4.37	0.12	5.35	49	0.30	0.17	Hydrogen Chloride
	Kiln K1 with Natural Gas Kiln Heaters (worst case)*	0.05	0.30	0.30	0.02	2.75	1.51	2.31	3,318	0.13	0.05	Hexane
	Diesel Generator	0.10	0.10	0.10	0.10	1.46	0.12	0.31	54	1.3E-03	3.9E-04	Formaldehyde
	Gasification Tank Heaters (natural gas)**	0.30	1.18	1.18	0.09	15.57	0.86	13.08	18,793	0.29	0.28	Hexane
	Gasification Tank Heaters (propane)**	0.35	1.21	1.21	1.74	22.56	1.74	13.01	22,182	0.00	0.00	---
	Thermal Oxidizers (natural gas)**	0.33	1.31	1.31	0.10	17.18	0.94	14.43	20,737	0.32	0.31	Hexane
	Thermal Oxidizers (propane)**	0.38	1.34	1.34	1.91	24.89	1.91	14.36	24,477	0.00	0.00	---
	Laboratory Unit (L1) Flare (natural gas pilot)	4.1E-03	0.02	0.02	1.3E-03	0.21	0.01	0.18	259	4.1E-03	1.6E-04	Hexane
	Laboratory Unit (L1) (with flare combustion of biogas)	0.02	0.02	0.02	0.0	0.06	18.70	12.66	126	4.60	1.88	Each Single HAP
Wood Gasification Units (E4 through E7) (Incomplete Oxidizer Combustion of Biogas)	0.0	0.0	0.0	0.0	0.0	74.81	50.63	0.0	18.40	7.53	Each Single HAP	
New Units	Carbon Crushers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
	Carbon Pulverizers	3.50	0.84	0.84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
<b>Total (Non-Fugitive)</b>		<b>11.48</b>	<b>8.03</b>	<b>7.59</b>	<b>3.99</b>	<b>56.29</b>	<b>98.91</b>	<b>98.94</b>	<b>50,465</b>	<b>24.05</b>	<b>9.42</b>	<b>Each Single HAP</b>
Existing Units	Wood Storage Piles (Fugitive)	17.26	16.29	16.29	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Unpaved Roads (Fugitive)	5.88	1.17	0.12	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Paved Roads (Fugitive)	1.78	0.36	0.09	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	Wood Tub Grinder (E3) (Fugitive)	3.94	3.94	3.94	0.0	0.0	0.0	0.0	0	0.0	0.0	---
	<b>Total (Fugitive)</b>	<b>28.86</b>	<b>21.76</b>	<b>20.44</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0.0</b>	<b>---</b>

negl. = negligible

\*Since the kiln is stated as being a direct fired unit, the worst emissions between the kiln and the natural gas fired combustion are used.

\*\*The wood gasifiers can use either natural gas or propane. PTE for these units based on worst case scenario for each pollutant.

**Appendix A: Emissions Calculations  
External Combustion Boiler  
Wood Waste Combustion (uncontrolled)  
Dry Wood**

**Wood-Fired Shop Heaters (E1 and E2)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

UNIT	MMBtu/hr
E1	1.017
E2	1.017
<b>TOTAL</b>	<b>2.03</b>

Capacity (MMBtu/hr) 2.03

	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO**
Emission Factor in lb/MMBtu	0.4	0.377	0.327	0.025	0.49	0.013	0.6
Potential Emissions in tons/yr	3.56	3.36	2.91	0.22	4.37	0.12	5.35

Wet wood is considered to be greater than or equal to 20% moisture content. Dry wood is considered to be less than 20% moisture content.

\*The PM10 and PM2.5 emission factors include the condensible PM emission factor of 0.017 lb/MMBtu, measured by EPA Method 202 (or equivalent) and the appropriate filterable PM emission factor, measured by EPA Method 5 (or equivalent). The PM emission factor is filterable PM measured by EPA Method 5 (or equivalent).

\*\*The CO emission factor is for stokers and dutch ovens/fuel cells. Change the emission factor to 0.17 lb/MMBtu if the calculations are for a fluidized bed combustor.

**Methodology**

To convert from tons/hr capacity to MMBtu/hr capacity:

Heat Input Capacity (MMBtu/hr) = Capacity (tons/hr) x Higher Heating Value of wood fuel (Btu/lb) x (1 MMBtu/10<sup>6</sup> Btu) x 2000 lbs/1 ton

Emissions (tons/yr) = Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760hrs/yr x 1ton/2000lbs

	Selected Hazardous Air Pollutants				
	Acrolein	Benzene	Formaldehyde	Hydrogen Chloride	Styrene
Emission Factor in lb/MMBtu	4.0E-03	4.2E-03	4.4E-03	1.9E-02	1.9E-03
Potential Emissions in tons/yr	3.6E-02	3.7E-02	3.9E-02	1.7E-01	1.7E-02
	<b>Total HAP</b>				3.0E-01

**Methodology**

To convert from tons/hr capacity to MMBtu/hr capacity:

Heat Input Capacity (MMBtu/hr) = Capacity (tons/hr) x Higher Heating Value of wood fuel (Btu/lb) x (1 MMBtu/10<sup>6</sup> Btu) x 2000 lbs/1 ton

Emissions (tons/yr) = Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760hrs/yr x 1ton/2000lbs

These factors include the five HAPs with the highest AP-42 emission factors.

	Greenhouse Gases		
	CO2	CH4	N2O
Emission Factor in kg/mmBtu from 40 CFR 98	**	0.032	
Emission Factor in lb/mmBtu from AP-42			0.013
Potential Emission in tons/yr	**	0.63	0.12
Summed Potential Emissions in tons/yr		1	**
CO2e Total in tons/yr		49	**

**Methodology**

To convert from tons/hr capacity to MMBtu/hr capacity:

Heat Input Capacity (MMBtu/hr) = Capacity (tons/hr) x Higher Heating Value of wood fuel (Btu/lb) x (1 MMBtu/10<sup>6</sup> Btu) x 2000 lbs/1 ton

CO2 and CH4 Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C. N2O emission factor from AP-43 Chapter 1.6 (revised 3/02).

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (kg/mmBtu) x 2.20462 lb/kg x 8760 hrs/yr /2,000 lb/ton

Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (lb/mmBtu) x 8760 hrs/yr /2,000 lb/ton

CO2e (tons/yr) = CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).\*\*

\*\* On July 1, 2011 EPA stayed the counting of CO2 emissions from Bioenergy and other Biogenic Sources.

**Appendix A: Emission Calculations  
Wood Tub Grinder E3**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Unit	Maximum Raw Wood Capacity (lbs/hr)	Maximum Raw Wood Capacity (tons/hr)	PM/PM10/PM2.5 Emission Factor (lb/ton)	PM/PM10/PM2.5 Uncontrolled Emissions (lb/hr)	PM/PM10/PM2.5 Uncontrolled Emissions (tons/yr)
E3	75,000	37.50	0.024	0.90	3.94

**Methodology**

Emission Factor is from AP-42 Table 10.3-1 Fourth Edition (1985) Plywood Veneer and Layout Operations (Log Debarking)  
 PM/PM10/PM2.5 Uncontrolled Emissions (tons/yr) = Maximum Raw Wood Capacity (lbs/hr) / 1 ton/2000 lbs \* Emission Factor (lb/ton) \* 8760 (hr/yr) / 1 ton/2000 lbs  
 Emission Factors are from Fire Version 5.0 Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants  
 EPA-454/R-95-012, August 1995, for Sawmill Operations for SCC 3-07-008-02 (Log Debarking)

**326 IAC 6-3-2 Allowable PM Emission Rate**

Unit	Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)
E3	75,000	37.5	46.49

**Methodology**

Allowable Emissions = 4.10 (Process Weight Rate tons/yr)<sup>0.67</sup>

**Appendix A: Emission Calculations  
Kiln (Pallet Dryer)**

**Volatile Organic Compound (VOC) Emissions and Hazardous Air Pollutant (HAP) Emissions**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Jan-13

Process	Maximum Throughput (BDFT/hr)*	Maximum Throughput (SF/hr)*	Maximum Throughput (MSF/yr)
Kiln	1,621.0	135.1	1,183

**Criteria Pollutants**

Pollutant	PM	PM10	PM2.5	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	CO <sub>2</sub>
Emission Factor (lb/MSF) (heated zone)**	0.079	0.499	0.499	NA	0.012	2.50	0.6400	28.0
Emission Factor (lb/MSF) (cooling zone)**	0	0	0	NA	0	0.044	0.010	0.010
Potential To Emit (tons/year)	0.05	0.30	0.30	NA	0.01	1.51	0.38	16.57

**Hazardous Air Pollutants (HAPs)**

Pollutant	Acetaldehyde	Acrolein	Benzene	Formaldehyde	MEK	Methanol	MIBK	Phenol	Propionaldehyde	Styrene	Toluene	Xylenes
Emission Factor (lb/MSF) (heated zone)**	0.0620	0.0090	0.0057	0.0640	0.0019	0.0360	0.0026	0.0060	0.0016	0.0015	0.0074	0.0039
Emission Factor (lb/MSF) (cooling zone)**	0.0034	0	0	0.0015	0	0.0057	0	0.0100	0	0	0	0
Potential To Emit (tons/year)	0.039	5.32E-03	3.37E-03	<b>0.039</b>	1.12E-03	0.025	1.54E-03	9.47E-03	9.47E-04	8.87E-04	4.38E-03	2.31E-03

**Potential To Emit Total HAPs (tons/year) 0.13**

**Methodology**

\*The kiln has a maximum capacity of 1821 BDFT/hr (6484 BDFT every 4 hours).

\*\*Emission factors are from AP-42 Chapter 10.5 (Plywood Manufacturing), Tables 10.5-1 and 10.5-2 (dated 01/02), for direct natural gas-fired, heated zones, softwood (SCC # 3-07-007-52) and direct natural gas-fired, heated zones, softwood (SCC # 3-07-007-53) with units of pounds of pollutant per thousand square feet of 3/8-inch thick veneer (lb/MSF 3/8)

NA = Not Available. There is no emission factor SO<sub>2</sub> for direct-fired softwood drying processes.

1 SF= 12 BDFT

1 MSF = 1000 square feet

Maximum Throughput (SF/hr) = [Maximum Throughput (BDFT/hr)] / [12 BDFT/SF]

Maximum Throughput (MSF/year) = [Maximum Throughput (SF/hr)] \* [1 MSF/1000 SF] \* [8760 hours/year]

Potential To Emit (tons/year) = [Maximum Throughput (MSF/year)] \* [Emission Factor (lb/MSF)] \* [ton/2000 lbs]

MIBK = Methyl isobutyl ketone

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
Kiln Natural Gas-Fired Heaters**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
6.4 (4 heaters @ 1.6 MMBtu/hr each)	1020	55.0

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.05	0.21	0.21	0.02	2.75	0.15	2.31

\*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

Emission Factor in lb/MMcf	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	5.8E-05	3.3E-05	2.1E-03	0.05	9.3E-05

Emission Factor in lb/MMcf	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.4E-05	3.0E-05	3.8E-05	1.0E-05	5.8E-05
	<b>Total HAP</b>				<b>0.05</b>

Methodology is the same as page 1.

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

**Greenhouse Gas Emissions**

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	3,298	0.06	0.06
Summed Potential Emissions in tons/yr	3,298		
CO2e Total in tons/yr	3,318		

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.  
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.  
 Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A: Emission Calculations  
Wood Storage Piles**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

**Wind Erosion on Wood Chip Storage Piles (Fugitive)**

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$E_f = 1.7 \cdot (s/1.5) \cdot (365-p) / 235 \cdot (f/15)$ <p>where <math>E_f</math> = total suspended particulate emission factor (lb/acre/day)  <math>s</math> = silt content of material (wt %)  <math>p</math> = 125 days of rain greater than or equal to 0.01 inches per year  <math>f</math> = 15 % of wind greater than or equal to 12 mph at the mean pile height</p>
--

Material	Silt Content (wt %) <sup>a</sup>	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)	Uncontrolled PTE of PM (tons/yr)	Uncontrolled PTE of PM10/PM2.5 (tons/yr) <sup>b</sup>
Wood	1.41	1.63	5.00	1.49	0.52

**Methodology**

PTE of PM (tons/yr) = [Emission Factor (lb/acre/day)] \* [Maximum Pile Size (acres)] \* (ton/2000 lbs) \* (8760 hours/yr)

PTE of PM10/PM2.5 (tons/yr) = [Potential PM Emissions (tons/yr)] \* 35%

<sup>a</sup> Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

<sup>b</sup> PM2.5 emissions assumed equal to PM10 emissions

**Dropping and Handling of Wood (Fugitive)**

Material	Throughput (lbs/hr)	Emission Factor (lb/ton)	Potential Uncontrolled PM/PM10/PM2.5 Emissions (lb/hr)	Potential Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr)
Wood	7200	1.00	3.60	15.77

Uncontrolled PM (tons/yr)	Uncontrolled PM10/PM2.5 (tons/yr)
17.26	16.29

**Total PTE of Wood Storage Piles**

The wood from the grinding operation can be handled in 3 ways.

- (1) direct drive blower into a enclosed trailer.
- (2) top loader into an open top trailer.
- (3) or top loader into a storage pile.

**Methodology**

Emission Factor is from Fire Version 5.0 Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants

EPA-454/R-95-012, August 1995, for Sawmill Operations for SCC 3-07-008-03 (Sawdust Pile Handling)

Potential Uncontrolled PM/PM10/PM2.5 (lb/hr) = Throughput (lb/hr) \* Emission Factor (lb/ton) / 1 ton/2000 lbs

Potential Uncontrolled PM/PM10,PM2.5 (tons/yr) = Potential Uncontrolled PM/PM10/PM2.5 (lb/hr) \* 8760 /1 tons/2000 lbs.

**Appendix A: Emission Calculations**  
**Reciprocating Internal Combustion Engines - Diesel Fuel**  
**Output Rating (<=600 HP)**  
**Maximum Input Rate (<=4.2 MMBtu/hr)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Output Horsepower Rating (hp)	10.73
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	93,995

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.10	0.10	0.10	0.10	1.46	0.12	0.31

\*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Hazardous Air Pollutants (HAPs)**

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	3.1E-04	1.3E-04	9.4E-05	1.3E-05	3.9E-04	2.5E-04	3.0E-05	5.5E-05

\*\*\*PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

\*\*\*\*Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

<b>Potential Emission of Total HAPs (tons/yr)</b>	<b>1.3E-03</b>
---	----------------

**Green House Gas Emissions (GHG)**

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	54	2.2E-03	4.4E-04

<b>Summed Potential Emissions in tons/yr</b>	<b>54</b>
<b>CO2e Total in tons/yr</b>	<b>54</b>

**Methodology**

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] \* [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] \* [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Potential Emission ton/yr x N2O GWP (310).

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

**Gasification Tank Heaters for  
Wood Gasification/Cogeneration Units (E4, E5, E6, and E7)  
and  
Small Research Laboratory Wood Gasification Unit (L1)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
36.25	1020	311.3

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.30	1.18	1.18	0.09	15.57	0.86	13.08

\*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

**HAPS Calculations**

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	3.3E-04	1.9E-04	1.2E-02	0.28	5.3E-04	2.9E-01

  

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	7.8E-05	1.7E-04	2.2E-04	5.9E-05	3.3E-04	8.5E-04
	<b>Total HAPs</b>					<b>0.29</b>
	<b>Worst HAP</b>					<b>0.28</b>

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.

**Greenhouse Gas Calculations**

Greenhouse Gas			
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	18,679	0.36	0.34
Summed Potential Emissions in tons/yr	18,680		
CO2e Total in tons/yr	18,793		

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.  
Emission Factors are from AP 42, Table 1.4-  
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A: Emission Calculations**  
**LPG-Propane - Industrial Boilers**  
(Heat input capacity: > 10 MMBtu/hr and < 100 MMBtu/hr)

**Gasification Tank Heaters for**  
**Wood Gasification/Cogeneration Units (E4, E5, E6, and E7)**  
**and**  
**Small Research Laboratory Wood Gasification Unit (L1)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Sulfur Content =	10.00	grains/100ft <sup>3</sup>
36.25	3470.49			

  

Emission Factor in lb/kgal	Pollutant						
	PM*	PM10*	direct PM2.5**	SO2	NOx	VOC	CO
	0.2	0.7	0.7	1.0 (0.10S)	13.0	1.0 **TOC value	7.5
Potential Emission in tons/yr	0.35	1.21	1.21	1.74	22.56	1.74	13.01

\*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM emission factors.

\*\* No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

\*\*The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

**Methodology**

1 gallon of LPG has a heating value of 94,000 Btu  
1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)  
(Source - AP-42 (Supplement B 10/96) page 1.5-1)

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

Emission Factors are from AP42 (7/08), Table 1.5-1 (SCC #1-02-010-02)

Propane Emission Factors shown. Please see AP-42 for butane.

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

See Page 2 for Greenhouse Gas calculations.

Emission Factor in lb/kgal	Greenhouse Gas		
	CO2	CH4	N2O
Potential Emission in tons/yr	21,691	0.3	1.6
Summed Potential Emissions in tons/yr	21,692		
CO2e Total in tons/yr	22,182		

**Methodology**

The CO2 Emission Factor for Propane is 12500. The CO2 Emission Factor for Butane is 14300.

Emission Factors are from AP 42 (7/08), Table 1.5-1 (SCC #1-02-010-02)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

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

**Gasification Tank Heaters for  
Wood Gasification/Cogeneration Units (E4, E5, E6, and E7)  
and  
Small Research Laboratory Wood Gasification Unit (L1)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
40.00	1020	343.5

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.33	1.31	1.31	0.10	17.18	0.94	14.43

\*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

**HAPS Calculations**

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	3.6E-04	2.1E-04	1.3E-02	0.31	5.8E-04	<b>3.2E-01</b>

  

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	8.6E-05	1.9E-04	2.4E-04	6.5E-05	3.6E-04	<b>9.4E-04</b>
	<b>Total HAPs</b>					<b>0.32</b>
	<b>Worst HAP</b>					<b>0.31</b>

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.

**Greenhouse Gas Calculations**

Greenhouse Gas			
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	20,612	0.40	0.38
Summed Potential Emissions in tons/yr	20,613		
CO2e Total in tons/yr	20,737		

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.  
Emission Factors are from AP 42, Table 1.4-  
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A: Emission Calculations  
LPG-Propane - Industrial Boilers  
(Heat input capacity: > 10 MMBtu/hr and < 100 MMBtu/hr)**

**Gasification Tank Heaters for  
Wood Gasification/Cogeneration Units (E4, E5, E6, and E7)  
and  
Small Research Laboratory Wood Gasification Unit (L1)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	SO2 Emission factor = 0.10 x S S = Sulfur Content =	10.00	grains/100ft <sup>3</sup>
40.00	3829.51			

  

Emission Factor in lb/kgal	Pollutant						
	PM*	PM10*	direct PM2.5**	SO2	NOx	VOC	CO
	0.2	0.7	0.7	1.0 (0.10S)	13.0	1.0 **TOC value	7.5
Potential Emission in tons/yr	0.38	1.34	1.34	1.91	24.89	1.91	14.36

\*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM emission factors.

\*\* No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

\*\*The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

**Methodology**

1 gallon of LPG has a heating value of 94,000 Btu  
1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)  
(Source - AP-42 (Supplement B 10/96) page 1.5-1)

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

Emission Factors are from AP42 (7/08), Table 1.5-1 (SCC #1-02-010-02)

Propane Emission Factors shown. Please see AP-42 for butane.

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

See Page 2 for Greenhouse Gas calculations.

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	12,500	0.2	0.9
Potential Emission in tons/yr	23,934	0.4	1.7
Summed Potential Emissions in tons/yr	23,937		
CO2e Total in tons/yr	24,477		

**Methodology**

The CO2 Emission Factor for Propane is 12500. The CO2 Emission Factor for Butane is 14300.

Emission Factors are from AP 42 (7/08), Table 1.5-1 (SCC #1-02-010-02)

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**Appendix A: Emissions Calculations**

**Incomplete Combustion of Biogas in Thermal Oxidizer for Wood Gasification/Cogeneration Units (E4, E5, E6, and E7)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

**Biogas Generation**

	per unit	
MMBtu/hr Biogas per Unit	10	
Btu/scf of Biogas	400	
scf/hr of biogas	25000	
Specific Gravity of Biogas (test)	0.98	
Density of air lb/scf	0.075	
Mass of biogas lb/hr	1842.2	
Fraction of CO in biogas (test*)	0.36	rounded up to 36%
Fraction VOCs in biogas (test*)	0.10	rounded up to 10%
Mass CO lb/hr	663.2	
Mass VOC lb/hr	184.2	
Percent HAP in VOC	5.0%	1,3-Butadiene
Mass HAP lb/hr	9.2	1,3-Butadiene
Mass of CO tons/yr pre-oxidizer	2904.8	
Mass of VOC tons/yr pre-oxidizer	806.9	
Mass of HAPs tons/yr pre-oxidizer	40.3	1,3-Butadiene

**Unlimited PTE - Worst Case Incomplete Combustion of Biogas in Oxidizer**

Worst Case Thermal Oxidizer Destruction Efficiency (%) 95.0%

	Worst Case PTE		
	1 unit	4 units	
Worst Case PTE of CO lb/hr post oxidizer	33.16	132.64	
Worst Case PTE of VOC lb/hr post oxidizer	9.21	36.84	
Percent HAP in VOC	5.0%	5.0%	1,3-Butadiene
Worst Case PTE of HAP lb/hr post oxidizer	0.461	1.84	1,3-Butadiene
Worst Case PTE of CO tons/yr post oxidizer	145.24	580.96	
Worst Case PTE of VOC tons/yr post oxidizer	40.34	161.38	
Worst Case PTE of HAPs tons/yr post oxidizer	2.02	8.07	1,3-Butadiene

**FESOP and PSD Minor Limits**

	Limited PTE	
	1 unit	4 units
Limited PTE of CO lb/hr post oxidizer	2.89	11.56
Limited PTE of VOC lb/hr post oxidizer	4.27	17.08
Limited PTE of Each Single HAP lb/hr post oxidizer	0.43	1.72
Limited PTE of Total HAPs lb/hr post oxidizer	1.05	4.20
Limited PTE of CO tons/yr post oxidizer	12.66	50.63
Limited PTE of VOC tons/yr post oxidizer	18.70	74.81
Limited PTE of Each Single HAP tons/yr post oxidizer	1.88	7.53
Limited PTE of Total HAPs tons/yr post oxidizer	4.60	18.40

**Methodology**

\*Test data Sherry Labs 3/11/2013

Mass of Biogas (lb/hr)= Heat Input Capacity (MMBtu/hr) x Heat Value of Biogas (Btu/scf) x Specific Gravity of Biogas x Density of Air (lb/scf)

Mass (lb/hr)= Fraction in Biogas x Mass of Biogas

PTE (tons/yr)= Mass (lb/hr) x 8760 (hrs/yr)/ 2000 (lbs/ton)

PTE Post Oxidizer (tons/yr)= PTE (tons/yr) x (1-Destruction Efficiency)

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

**Flare Pilot Flame for  
Small Research Laboratory Wood Gasification Unit (L1)  
Natural Gas Combustion Only**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
0.50	1020	4.3

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.00	0.02	0.02	1.3E-03	0.21	0.01	0.18

\*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

**HAPS Calculations**

	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	4.5E-06	2.6E-06	1.6E-04	3.9E-03	7.3E-06	<b>4.0E-03</b>

  

	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	1.1E-06	2.4E-06	3.0E-06	8.2E-07	4.5E-06	<b>1.2E-05</b>
					<b>Total HAPs</b>	<b>4.1E-03</b>
					<b>Worst HAP</b>	<b>3.9E-03</b>

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.

**Greenhouse Gas Calculations**

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	258	0.00	0.00
Summed Potential Emissions in tons/yr	258		
CO2e Total in tons/yr	259		

**Methodology**

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.  
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.  
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emissions Calculations

Small Research Laboratory Wood Gasification Unit (L1)  
Potential to Emit Before and After Flare

Company Name: CLM Pallet Recycling, Inc.  
Source Address: 3103 W 1000 N, Fortville, Indiana 46040  
Permit No: 059-34402-00037  
Reviewer: Brian Wright  
Date: Apr-14

Biogas Generated

Biogas Generated (scf/min)	8.3
Biogas Generated (scf/hr)	500
Heat Content (Btu/scf)	400
Biogas Generated (MMBtu/hr)	0.20
Biogas Generated (MMcf/year)	4.38
Biogas Generated (MMBtu/year)	1752.0

Methodology

Biogas Generated (scf/hr) = Biogas Generated (scf/min) \* [60 min/hour]  
Biogas Generated (MMBtu/hr) = [Biogas Generated (scf/min)] \* [Heat Content (Btu/scf)] \* [60 min/hour] / [1000000 Btu/MMBtu]  
Biogas Generated (MMcf/year) = [Biogas Generated (scf/min)] \* [60 min/hour] \* [8760 hours/year] / [1000000 scf/MMcf]  
Biogas Generated (MMBtu/year) = [Biogas Generated (MMBtu/hr)] \* [8760 hours/year]

Potential to Emit (Before Flare)

Specific Gravity of Biogas (test)	0.98	
Density of air lb/scf	0.075	
Mass of biogas lb/hr	36.8	
Fraction of CO in biogas (test*)	0.36	rounded up to 36%
Fraction VOCs in biogas (test*)	0.10	rounded up to 10%
Mass CO lb/hr	13.3	
Mass VOC lb/hr	3.7	
Percent HAP in VOC	5.0%	1,3-Butadiene
Mass HAP lb/hr	0.184	1,3-Butadiene
PTE of CO tons/yr	58.10	
PTE of VOC tons/yr	16.14	
PTE of HAPs tons/yr	0.807	1,3-Butadiene

Methodology

\*Test data Sherry Labs 3/11/2013  
Mass of Biogas (lb/hr) = Heat Input Capacity (MMBtu/hr) x Heat Value of Biogas (Btu/scf) x Specific Gravity of Biogas x Density of Air (lb/scf)  
Mass (lb/hr) = Fraction in Biogas x Mass of Biogas  
PTE (tons/yr) = Mass (lb/hr) x 8760 (hrs/yr) / 2000 (lbs/ton)

Potential to Emit (After Flare)

Criteria Pollutants	Pollutant	
	PM/PM10/PM2.5*	NOx**
Emission Factor	177.0 (ug/L)	0.068 (lbs/MMBtu)
Potential to Emit (PTE) (tons/yr)	0.02	0.06

Methodology

\*Emission Factor for PM is from AP-42, Chapter 13.5 - Industrial Flares -Table 13.5-1 - Soot for average smoking flares (AP-42, 01/95).  
PM10 and PM2.5 emissions are assumed equal to PM emissions.  
\*\*Emission Factors for NOx, VOC, and CO are from AP-42, Chapter 13.5 - Industrial Flares, Table 13.5-1 (AP-42, 01/95)  
PTE of PM/PM10/PM2.5 (tons/yr) = [Biogas Generated (MMBtu/year)] \* [1000000 ft3/MMcf] \* [28.317 L/ft3] \* [Emission Factor (ug/L)] \* [g/1000000 ug] \* [lbs/453.6 g] \* [ton/2000 lbs]  
PTE of NOx/VOC/CO (tons/yr) = [Biogas Generated (MMBtu/year)] \* [Emission Factor (lbs/MMBtu)] \* [ton/2000 lbs]

FESOP and PSD Minor Limits

Limited PTE of CO lb/hr post flare	2.89
Limited PTE of VOC lb/hr post flare	4.27
Limited PTE of Each Single HAP lb/hr post flare	0.43
Limited PTE of Total HAPs lb/hr post flare	1.05
Limited PTE of CO tons/yr post flare	12.66
Limited PTE of VOC tons/yr post flare	18.70
Limited PTE of Each Single HAP tons/yr post flare	1.88
Limited PTE of Total HAPs tons/yr post flare	4.60

Greenhouse Gases (GHGs)

Chemical Type	Pollutant Emission Factor (lb/MMBtu)*			Potential to Emit (tons/year)		
	CO2	CH4	N2O	CO2	CH4	N2O
Biogas	143.63	0.00661	0.00132	125.82	0.006	0.001
Summed Potential Emissions in tons/yr				125.83		
CO2e Total in tons/yr				126.30		

Methodology

\*For Biogas, the CO2, CH4, and N2O emission factors are from 40 CFR Part 98, Subpart C, Table C-1 (for Butane) and Table C-2 (Petroleum)  
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.  
Potential to Emit (tons/yr) = [Biogas Comubsted (MMBtu/year)] \* [Emission Factor (lb/MMBtu)] \* [ton/2,000 lbs]  
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Abbreviations

PM = Particulate Matter  
PM10 = Particulate Matter (<10 um)  
SO2 = Sulfur Dioxide  
NOx = Nitrous Oxides  
VOC = Volatile Organic Compounds  
CO = Carbon Monoxide  
CO2 = Carbon Dioxide  
CH4 = Methane  
N2O = Nitrous Oxide  
CO2e = CO2 equivalent emissions

**Appendix A: Emission Calculations  
Fugitive Dust Emissions - Unpaved Roads**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

**Unpaved Roads at Industrial Site**

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (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)
Large Dump Truck (entering)	8	1.0	8.0	15	120.0	1056	0.200	1.6	584.0
Large Dump Truck (leaving)	8	1.0	8.0	23	184.0	1056	0.200	1.6	584.0
Small Dump Truck (entering)	2	1.0	2.0	8	16.0	1056	0.200	0.4	146.0
Small Dump Truck (leaving)	2	1.0	2.0	13	26.0	1056	0.200	0.4	146.0
Semi Tractor Trailer (entering)	5	1.0	5.0	17	85.0	715	0.135	0.7	247.1
Semi Tractor Trailer (leaving)	5	1.0	5.0	20	100.0	715	0.135	0.7	247.1
Large Front-end Loader Cat 950 (entering)	2	100.0	200.0	12	2400.0	58	0.011	2.2	801.9
Large Front-end Loader Cat 950 (leaving)	2	100.0	200.0	14	2800.0	58	0.011	2.2	801.9
Small Front-end Loader Cat 926 (entering)	2	100.0	200.0	8	1600.0	58	0.011	2.2	801.9
Small Front-end Loader Cat 926 (leaving)	2	100.0	200.0	9	1800.0	58	0.011	2.2	801.9
Light Duty (Pickup Trucks etc.) (entering)	6	1.0	6.0	5	30.0	1056	0.200	1.2	438.0
Light Duty (Pickup Trucks etc.) (leaving)	6	1.0	6.0	8	45.0	1056	0.200	1.2	438.0
<b>Totals</b>			<b>842.0</b>		<b>9206.0</b>			<b>16.5</b>	<b>6037.8</b>

Average Vehicle Weight Per Trip = 10.9 tons/trip  
 Average Miles Per Trip = 0.02 miles/trip

Unmitigated Emission Factor, Ef =  $k \cdot [(s/12)^a] \cdot [(W/3)^b]$  (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	1.4	1.4	1.4	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	10.9	10.9	10.9	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext =  $E \cdot [(365 - P)/365]$  (Equation 2 from AP-42 13.2.2)

Mitigated Emission Factor, Eext =  $E \cdot [(365 - P)/365]$   
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	1.95	0.39	0.04	lb/mile
Mitigated Emission Factor, Eext =	1.28	0.26	0.03	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Large Dump Truck (entering)	0.57	0.11	0.01	0.37	0.07	0.01	0.19	0.04	0.00
Large Dump Truck (leaving)	0.57	0.11	0.01	0.37	0.07	0.01	0.19	0.04	0.00
Small Dump Truck (entering)	0.14	0.03	0.00	0.09	0.02	0.00	0.05	0.01	0.00
Small Dump Truck (leaving)	0.14	0.03	0.00	0.09	0.02	0.00	0.05	0.01	0.00
Semi Tractor Trailer (entering)	0.24	0.05	0.00	0.16	0.03	0.00	0.08	0.02	0.00
Semi Tractor Trailer (leaving)	0.24	0.05	0.00	0.16	0.03	0.00	0.08	0.02	0.00
Large Front-end Loader Cat 950 (entering)	0.78	0.16	0.02	0.51	0.10	0.01	0.26	0.05	0.01
Large Front-end Loader Cat 950 (leaving)	0.78	0.16	0.02	0.51	0.10	0.01	0.26	0.05	0.01
Small Front-end Loader Cat 926 (entering)	0.78	0.16	0.02	0.51	0.10	0.01	0.26	0.05	0.01
Small Front-end Loader Cat 926 (leaving)	0.78	0.16	0.02	0.51	0.10	0.01	0.26	0.05	0.01
Light Duty (Pickup Trucks etc.) (entering)	0.43	0.09	0.01	0.28	0.06	0.01	0.14	0.03	0.00
Light Duty (Pickup Trucks etc.) (leaving)	0.43	0.09	0.01	0.28	0.06	0.01	0.14	0.03	0.00
<b>Totals</b>	<b>5.88</b>	<b>1.17</b>	<b>0.12</b>	<b>3.87</b>	<b>0.77</b>	<b>0.08</b>	<b>1.93</b>	<b>0.39</b>	<b>0.04</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (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 (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

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

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

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

**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 Information (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 Loaded (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)
Large Dump Truck (entering)	2.0	1.0	2.0	15.0	30.0	1056	0.200	0.4	146.0
Large Dump Truck (leaving)	2.0	1.0	2.0	23.0	46.0	1056	0.200	0.4	146.0
Small Dump Truck (entering)	1.0	1.0	1.0	8.0	8.0	1056	0.200	0.2	73.0
Small Dump Truck (leaving)	1.0	1.0	1.0	13.0	13.0	1056	0.200	0.2	73.0
Semi Tractor Trailer (entering)	18.0	1.0	18.0	17.0	306.0	715	0.135	2.4	889.7
Semi Tractor Trailer (leaving)	18.0	1.0	18.0	20.0	360.0	715	0.135	2.4	889.7
Large Front-end Loader Cat 950 (entering)	2.0	1.0	2.0	12.0	24.0	106	0.020	0.0	14.7
Large Front-end Loader Cat 950 (leaving)	2.0	1.0	2.0	14.0	28.0	106	0.020	0.0	14.7
Small Front-end Loader Cat 926 (entering)	2.0	1.0	2.0	8.0	16.0	106	0.020	0.0	14.7
Small Front-end Loader Cat 926 (leaving)	2.0	1.0	2.0	9.0	18.0	106	0.020	0.0	14.7
<b>Totals</b>			<b>50.0</b>		<b>849.0</b>			<b>6.2</b>	<b>2276.0</b>

Average Vehicle Weight Per Trip = 17.0 tons/trip  
 Average Miles Per Trip = 0.12 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 =	17.0	17.0	17.0	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m <sup>2</sup> = 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 =	1.563	0.313	0.0767	lb/mile
Mitigated Emission Factor, Eext =	1.429	0.286	0.0701	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Large Dump Truck (entering)	0.11	0.02	0.01	0.10	0.02	0.01	0.05	0.01	0.00
Large Dump Truck (leaving)	0.11	0.02	0.01	0.10	0.02	0.01	0.05	0.01	0.00
Small Dump Truck (entering)	0.06	0.01	0.00	0.05	0.01	0.00	0.03	0.01	0.00
Small Dump Truck (leaving)	0.06	0.01	0.00	0.05	0.01	0.00	0.03	0.01	0.00
Semi Tractor Trailer (entering)	0.70	0.14	0.03	0.64	0.13	0.03	0.32	0.06	0.02
Semi Tractor Trailer (leaving)	0.70	0.14	0.03	0.64	0.13	0.03	0.32	0.06	0.02
Large Front-end Loader Cat 950 (entering)	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Large Front-end Loader Cat 950 (leaving)	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Small Front-end Loader Cat 926 (entering)	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Small Front-end Loader Cat 926 (leaving)	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
<b>Totals</b>	<b>1.78</b>	<b>0.36</b>	<b>0.09</b>	<b>1.63</b>	<b>0.33</b>	<b>0.08</b>	<b>0.81</b>	<b>0.16</b>	<b>0.04</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (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 (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
 Controlled PTE (tons/yr) = [Mitigated PTE (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

**Appendix A: Emission Calculations  
Carbon Crushers (C1 and C2)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

	Number of Wood Gasification Units	Maximum Wood Capacity of Wood Gasification Unit (ton/hr)	Total Wood Capacity (ton/hr)	Percent Carbon Conversion	Total Carbon Output Capacity (ton/hr)	Operating Hours per year (hr/yr)	Total Carbon Output Capacity (ton/yr)
Carbon Crushers (2 units combined)	4	2	8	33.33%	2.67	8760	23,358

Control Device: Dust Collector (Each Unit)  
Control Efficiency:

	PM	PM <sub>10</sub> / PM <sub>2.5</sub>
Uncontrolled emission factor (lb/ton)	0.30	0.072
Uncontrolled Potential to Emit (lbs/hr)	0.800	0.192
Uncontrolled Potential to Emit (tons/yr)	3.50	0.84
Controlled Potential to Emit (lbs/hr)	0.008	0.0019
Controlled Potential to Emit (tons/yr)	0.035	0.0084

**Methodology**

\*Emission factors are from AP-42 Chapter 11.9.2 (Crushed Stone Processing and Pulverized Mineral Processing ), Table 11.19.2-2, for fines screening.

Uncontrolled Potential to Emit (lbs/hr) = Emissions Factor (lb/ton) \* Total Carbon Output Capacity (ton/hr)

Uncontrolled Potential to Emit (tons/yr) = [Uncontrolled Potential to Emit (lbs/hr)] \* [8760 hours/year] \* [ton/2000 lbs]

Controlled Potential to Emit (lbs/hr) = Uncontrolled Potential to Emit (lbs/hr) \* (1 - control efficiency)

Controlled Potential to Emit (tons/yr) = Uncontrolled Potential to Emit (tons/yr) \* (1 - control efficiency)

**Appendix A: Emission Calculations  
Carbon Pulverizers (P1 through P4)**

**Company Name:** CLM Pallet Recycling, Inc.  
**Source Address:** 3103 W 1000 N, Fortville, Indiana 46040  
**Permit No:** 059-34402-00037  
**Reviewer:** Brian Wright  
**Date:** Apr-14

	Number of Wood Gasification Units	Maximum Wood Capacity of Wood Gasification Unit (ton/hr)	Total Wood Capacity (ton/hr)	Percent Carbon Conversion	Total Carbon Output Capacity (ton/hr)	Operating Hours per year (hr/yr)	Total Carbon Output Capacity (ton/yr)
Carbon Pulverizers (4 unit combined)	4	2	8	33.33%	2.67	8760	23,358

Control Device: Dust Collector (Each Unit)  
Control Efficiency:

	PM	PM <sub>10</sub> / PM <sub>2.5</sub>
Uncontrolled emission factor (lb/ton)*	0.30	0.072
Uncontrolled Potential to Emit (lbs/hr)	0.800	0.192
Uncontrolled Potential to Emit (tons/yr)	3.50	0.84
Controlled Potential to Emit (lbs/hr)	0.008	0.0019
Controlled Potential to Emit (tons/yr)	0.035	0.0084

**Methodology**

\*Emission factors are from AP-42 Chapter 11.9.2 (Crushed Stone Processing and Pulverized Mineral Processing ), Table 11.19.2-2, for fines screening.

Uncontrolled Potential to Emit (lbs/hr) = Emissions Factor (lb/ton) \* Total Carbon Output Capacity (ton/hr)

Uncontrolled Potential to Emit (tons/yr) = [Uncontrolled Potential to Emit (lbs/hr)] \* [8760 hours/year] \* [ton/2000 lbs]

Controlled Potential to Emit (lbs/hr) = Uncontrolled Potential to Emit (lbs/hr) \* (1 - control efficiency)

Controlled Potential to Emit (tons/yr) = Uncontrolled Potential to Emit (tons/yr) \* (1 - control efficiency)



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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**Michael R. Pence**  
*Governor*

**Thomas W. Easterly**  
*Commissioner*

## SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Mark Loughery  
CLM Pallet Recycling, Inc.  
3103 W 1000 N  
Fortville, IN 46040

DATE: May 15, 2014

FROM: Matt Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

SUBJECT: Final Decision  
First Minor Permit Revision to FESOP  
059-34402-00037

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:  
Walter Koucky, Consultant, Cornerstone Environmental  
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](mailto:jbrush@idem.IN.gov).

Final Applicant Cover letter.dot 6/13/2013

# Mail Code 61-53

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2		Hancock County Commissioners 111 American Legion #219 Greenfield IN 46140 (Local Official)										
3		Hancock County Health Department 111 America Legion Greenfield IN 46140-2365 (Health Department)										
4		Fortville Town Council 714 E. Broadway Fortville IN 46040 (Local Official)										
5		Les & Janet Whelchel 16542 E 96th St Fortville IN 46040 (Affected Party)										
6		Rick & Cynthia Fox Fox Communications, Inc 16520 E 96th St Fortville IN 46040 (Affected Party)										
7		Greg Kellow 16498 E 96th St Fortville IN 46040 (Affected Party)										
8		Thomas Cairns 19498 E 96th St Fortville IN 46040 (Affected Party)										
9		Hancock Physicians Network 600 Vitality Dr Fortville IN 46040 (Affected Party)										
10		The Bridge Church 611 Vitality Dr Fortville IN 46040 (Affected Party)										
11		David Crowe 3297 W 1000 N Fortville IN 46040 (Affected Party)										
12		Dale Leonard 3193 W 1000 N Fortville IN 46040 (Affected Party)										
13		Timothy Scroggins 3171 W 1000 N Fortville IN 46040 (Affected Party)										
14		Walter Koucky Cornerstone Environmental 880 Lennox Court Zionsville IN 46077 (Consultant)										
15												

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