



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

**MISSOURI AIR CONSERVATION COMMISSION**

**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number:

**09 2016 - 019**

Project Number: 2016-06-009

Installation Number: 510-3025

Parent Company: Pallet Logistics Management

Parent Company Address: 3311 Chouteau Avenue, Saint Louis, MO 63103

Installation Name: Pallet Logistics Management

Installation Address: 3311 Chouteau Avenue, Saint Louis, MO 63103

Location Information: Saint Louis City, Land Grants 00363

Application for Authority to Construct was made for:

Pallet Recycling. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Prepared by  
Chad Stephenson  
New Source Review Unit



Director or Designee  
Department of Natural Resources

**SEP 30 2016**

Effective Date

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

### Contact Information:

Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Pallet Logistics Management  
Saint Louis City, Land Grants 00363

1. Annual Emission Limit
  - A. Pallet Logistics Management shall emit less than 15.0 tons of PM<sub>10</sub> in any 12-month period from the entire installation as shown in Table 1.
  - B. Pallet Logistics Management shall demonstrate compliance with Special Condition 1.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
2. Control Device – Conveyor and Bin Enclosure
  - A. Pallet Logistics Management shall keep mulch bin infeed conveyor (EP-3) and mulch bin storage (EP-4) covered and enclosed at all times during operation.
3. Wet Suppression Control System Requirement
  - A. Pallet Logistics Management shall install and operate wet spray devices on the inlet and outlet of the grinder (EP-01 and EP-02).
  - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, Pallet Logistics Management shall adjust the production rate to control emissions from these units. Pallet Logistics Management shall record a brief description of such events.
4. Record Keeping and Reporting Requirements
  - A. Pallet Logistics Management shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
  - B. Pallet Logistics Management shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2016-06-009

Installation ID Number: 510-3025

Permit Number:

092016 - 019

Installation Address:

Pallet Logistics Management  
3311 Chouteau Avenue  
Saint Louis, MO 63103

Parent Company:

Pallet Logistics Management  
3311 Chouteau Avenue  
Saint Louis, MO 63103

Saint Louis City, Land Grants 00363

REVIEW SUMMARY

- Pallet Logistics Management has applied for authority to construct a pallet recycling facility.
- The application was deemed complete on July 12, 2016.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Wet Spray devices and a conveyor enclosure is being used to control the PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis and no refined modeling is required. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.
- This installation is located in St. Louis City County, a nonattainment area for 1997 PM<sub>2.5</sub> and 2008 8-hour ozone.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 100 tons per year for nonattainment pollutants, 250 tons per year for attainment pollutants, and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.

- Emissions testing is not required for the equipment as a part of this permit. Testing may be required as part of other state, federal or applicable rules.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

## INSTALLATION/PROJECT DESCRIPTION

Pallet Logistics Management (PLM) was started in 2000 as a pallet recycling facility. The facility is located at 3311 Chouteau Avenue, Saint Louis, Missouri. The existing facility was built without obtaining a construction permit. Recently the installation was inspected and required to either apply for a permit or demonstrate that a permit is not required. A construction permit application was received on June 6, 2016, and deemed complete as of July 12, 2016. This permit is part of a remedial action required by the Air Pollution Control Program.

Wooden pallets arrive via tractor trailer on paved asphalt roads on the property. Pallets are unloaded via forklift and put on a conveyor. An employee inspects each pallet and decides if it needs to be fixed or not. If it does not need to be fixed the pallet is transported via conveyor to pallet stackers. If it does need to be fixed, the pallet is transferred to a pallet repair person who tears off broken boards and adds good boards. The broken boards are thrown on a waste conveyor.

If the pallet cannot be repaired, the pallet is taken to the teardown area where a bandsaw is used to cut the pallet down to salvage any good boards. The rest of the pallet remnants are placed on the waste conveyor.

The waste conveyor dumps onto a metal shaker table that acts as a conveyor. The shaker table feeds the grinder. The grinder grinds up the boards into wooden mulch. The mulch passes through a magnet which extracts the nails. The mulch then drops onto a covered conveyor that takes the mulch up to a bin. The mulch falls into the bin. When full, the bin is opened so the mulch can fall into an open top trailer. The trailer is covered with a tarp when full and then leaves the property to be delivered to the customer. The paved haul road is approximately 800 feet long. The typical capacity of a trailer that leaves the property is 100 cubic yards. Approximately 100 cubic yards is transported out daily.

Water through spray nozzles is applied to the wood boards before it enters the grinder. Water is again applied after the nails are extracted and water is applied a third time as the mulch falls into the bin. At the point where mulch falls into the bin, the opening is covered, the belt is brushed and any residual mulch is directed into the bin.

Table 1 contains a summary of the emission points at this facility and the equipment that was evaluated for this permit. The maximum hourly design rates (MHDR) for the equipment was determined using the average of 2011-2015 production data divided by

the actual hours of operation. The facility has historically operated 10 hours a day, 5 days a week, 50 weeks a year.

Table 1: Facility Emissions Points

Point ID	Description	SCC	MHDR	Units	Control Device
EP-1	Infeed Conveyor/Pallet Grinder/Sawing	3-07-008-02	2.24	Tons pallets processed/hr	Water Spray
EP-2	Pallet/Mulch Handling	3-07-008-03	2.24	Tons logs processed /hr	Water Spray
EP-3	Mulch Bin Infeed Conveyor	3-07-008-03	2.24	Tons logs processed /hr	Enclosure
EP-4	Mulch Bin Storage	3-07-030-01	2.24	Tons logs processed /hr	Enclosure
EP-5	Mulch Bin Loadout	3-07-030-02	2.24	Tons logs processed /hr	Water Spray
EP-6	Haul Road (800ft)	N/A	0.0309	VMT/hr	Uncontrolled Paved

N/A = Not Applicable

### EMISSIONS/CONTROLS EVALUATION

There are no emission factors specific to wood pallet sawing and mulch handling. The emission factors for wood pallet sawing and mulch handling for particulate matter and PM<sub>10</sub> were obtained from WebFire (Factor Information Retrieval System), EPA's online emission factor repository, for the Source Classification Codes (SCC) 3-07-008-02 and 3-07-008-03. These emission factors are for log sawing and saw dust pile handling. Emission factors for PM<sub>2.5</sub> were developed assuming that 50.0% of the PM<sub>10</sub> generated from pallet sawing is PM<sub>2.5</sub>.

The emission factors for the storage bin and bin loadout for particulate matter and PM<sub>10</sub> were obtained from WebFire (Factor Information Retrieval System), EPA's online emission factor repository, for the Source Classification Codes (SCC) 3-07-030-01 and 3-07-030-02. These emission factors are for wood waste. Emission factors for PM<sub>2.5</sub> were developed assuming that 50.0% of the PM<sub>10</sub> generated is PM<sub>2.5</sub>.

The bin infeed conveyor (EP-3) and bin storage (EP-4) are enclosed on four sides with covers being used to control particulate matter emissions. A 50% control efficiency for PM, PM<sub>10</sub> and PM<sub>2.5</sub> was assigned to EP-3 and EP-4. A 50% control efficiency for PM, PM<sub>10</sub> and PM<sub>2.5</sub> was also assigned to EP-1 and EP-2 for the use of water spray devices.

Haul road emission factors were obtained from the Environmental Protection Agency (EPA) document AP-42, Section 13.2.1 "Paved Roads" (January, 2011).

The following table provides an emissions summary for this project. There are no existing actual or potential emissions since this is a newly permitted facility. Potential emissions of the application represent the potential of the equipment, assuming continuous operation (8760 hours per year). Conditioned potential emissions account for the voluntary PM<sub>10</sub> annual emission limit to avoid dispersion modeling requirements found in 10 CSR-6.060 Section (6).

Table 2: Emissions Summary (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Project	Conditioned Potential Emissions of Installation
PM	25.0	N/A	N/A	33.23	28.52
PM <sub>10</sub>	15.0	N/A	N/A	17.47	<15.0
PM <sub>2.5</sub>	10.0	N/A	N/A	8.73	7.50
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

#### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM<sub>10</sub> are conditioned below de minimis and no refined modeling is required. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

#### APPLICABLE REQUIREMENTS

Pallet Logistics Management shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

## GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110*
  - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin, 10 CSR 10-6.170*
- *Restriction of Emission of Visible Air Contaminants, 10 CSR 10-6.220*
- *Restriction of Emission of Odors, 10 CSR 10-6.165*

## SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400*

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 31, 2016, received June 6, 2016, designating Pallet Logistics Management as the owner and operator of the installation.



## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ...	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ..	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EIQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		



Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

## DEPARTMENT OF NATURAL RESOURCES

[www.dnr.mo.gov](http://www.dnr.mo.gov)

**SEP 30 2016**

Mr. Mark Brosman  
Director of Operations  
Pallet Logistics Management  
3311 Chouteau Avenue  
Saint Louis, MO 63103

RE: New Source Review Permit - Project Number: 2016-06-009

Dear Mr. Brosman:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information

Mr. Mark Brosman  
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is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc).

If you have any questions regarding this permit, please do not hesitate to contact Chad Stephenson, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp  
New Source Review Unit Chief

SH:csj

Enclosures

c: St. Louis Regional Office  
PAMS File: 2016-06-009

Permit Number: