



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53 IGCN 1003
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: November 1, 2007
RE: Global Group, Inc. / 039-25232-00632
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, 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.

Enclosures
FN-REGIS.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
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Mr. Rick Willis
Global Group, Inc.
54722 Chelsea Court
Elkhart, Indiana 46516

November 1, 2007

Re: Registration No. R039-25232-00632
Registered Construction and Operation Status

Dear Mr. Willis:

The application from Global Group, Inc., received on August 31, 2007, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5-2(b), it has been determined that the following stationary wood pallet manufacturing and recycling plant, located at 54722 Chelsea Court, Elkhart, Indiana 46516, is classified as registered:

- (a) One (1) diesel-fired stationary wood grinder, identified as WG, approved for construction in 2007, with a maximum wood grinding capacity of 6.5 tons per hour, and powered by a 440 HP engine.
- (b) Two (2) wood cutting and assembly lines equipped with one cyclone and a baghouse unit for particulate control, identified as SV1 and SV2, constructed in 2005, with a maximum combined production rate of 21,000 lbs of wood per hour.
- (c) One (1) wood transfer conveyer, constructed in 2005, with a maximum capacity of 6.72 tons per hour, with fugitive emissions controlled by water spray.
- (d) One (1) wood scrap storage pile, having a storage area of 1 acre, with fugitive emissions controlled by water spray.
- (e) Four (4) natural gas fired forced air space heaters, constructed in 2005, identified as H2, H3, H4, and H5, each with a maximum heat input capacity of 0.3 MMBtu/hr.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (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 15 minutes (60 readings in a 6-hour period 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.

2. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-off-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.
3. Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate emissions shall be controlled according to the Fugitive Dust Control Plan submitted on September 28, 2007. The Plan is included as Attachment A.
4. Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the woodworking operations shall not exceed the following:

Description	Process Weight Rate (lbs/hr)	Allowable PM Emission Rate (lbs/hour)
Wood Cutting (Line1, Line2)	21,500	20.13
Wood Grinding	13,000	14.36

The allowable rate of emission was calculated as follows:

Interpolation of the data in the table in 326 IAC 6-3-2(e)(2) for the process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

When the process weight rate is less than one hundred (100) pounds per hour, the allowable rate of emission is five hundred fifty-one thousandths (0.551) pound per hour.

The source remains a registered source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Swarna Prabha, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204, at 317-234-5376 or at 1-800-451-6027 (ext 45376).

Sincerely,

Original signed by Iryn Calilung for
Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance Section – Paul Karkiewicz
IDEM Northern Regional Office
Permit Tracking
Compliance Data Section
Permits Administrative and Development
Billing, Licensing and Training Section – Dan Stamatkin

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Global Group, Inc.
Address:	54722 Chelsea Court
City:	Elkhart, Indiana 46516
Phone #:	(574) 293-1949
Registration Revision #:	R039-25232-00632

Certification by the Authorized Individual
I hereby certify that Global Group, Inc. is still in operation and is in compliance with the requirements of Registration R039-25232-00632
Name (typed):
Title:
Signature:
Phone Number:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Global Group, Inc.
Source Location: 54722 Chelsea Court, Elkhart, IN 46516
County: Elkhart
SIC Code: 2448
Operation Permit No.: 039-25232-00632
Permit Reviewer: Swarna Prabha

The Office of Air Quality (OAQ) has reviewed an application from Global Group, Inc. relating to the construction and operation of a new emission unit in their existing stationary wood pallet manufacturing and recycling production operation.

History

On September 29, 2005, IDEM issued a Source Specific Operating Agreement (SSOA) 039-21369-00632 to Global Group Inc. However with the addition of the stationary wood grinder the source is transitioning from a SSOA to a Registration.

New Permitted Emission Units and Pollution Control Equipment

One (1) diesel fired stationary wood grinder, identified as WG, approved for construction in 2007, with a maximum wood grinding capacity of 6.5 tons per hour, and powered by a 440 HP engine.

Permitted emission units and Pollution Control Equipment:

The source consists of the following permitted emission units:

- (a) Two (2) wood cutting and assembly lines equipped with one cyclone and a baghouse unit for particulate control, identified as SV1 and SV2, constructed in 2005, with a maximum combined production rate of 21,500 lbs of wood per hour.
- (b) One (1) wood transfer conveyer, constructed in 2005, with a maximum capacity of 6.72 tons per hour, with fugitive emissions controlled by water spray.
- (c) One (1) wood scrap storage pile, having a storage area of 1 acre, with fugitive emissions controlled by water spray.
- (d) Four (4) natural gas fired forced air space heaters, constructed in 2005, identified as H2, H3, H4, and H5, each with a maximum heat input capacity of 0.3 MMBtu/hr.

Unpermitted Emission Units and Pollution Control Equipment

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

Emission Units and Pollution Control Equipment Removed From the Source

There are no emission units removed from the source during this review process.

Existing Approvals

The source has been operating under SSOA No. S039-21369-00632, issued on September 29, 2005.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (inch)	Flow Rate (acfm)	Temperature (°F)
none	Baghouse	40	36	n/a	70.0
Vent	heater	24	4	n/a	70.0

Emission Calculations

- (a) See Appendix A of this TSD for detailed emissions calculations (Appendix A, pages 1 through 7).

Potential to Emit

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

The following table reflects the PTE of the entire source potential before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential to Emit (tons/year)
PM	18.44
PM10	20.09
SO ₂	2.55
VOC	0.04
CO	0.62
NO _x	1.24

HAPs	Potential to Emit (tons/year)
n-Hexane	9.5E-03
Combination HAPs	1.0E-02

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are less than 25 tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM10 are each greater than 5 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

- (c) **Fugitive Emissions**
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-7, and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward the determination of Part 70 applicability.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
PM 2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Elkhart County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (c) Elkhart 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. See the State Rule Applicability – Entire Source section.
- (d) **Fugitive Emissions**
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.
- (e) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

Source Status

Existing Source PSD, Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	16.76
PM-10	19.60
VOC	0.04
SO ₂	2.55
CO	0.62
NO _x	1.24
Worst Single HAP	9.5E-03
Combination HAPs	1.0E-02

- (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 in one of the 28 listed source categories, as specified in 326IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This existing source is not a major stationary source, under Emission Offset (326 IAC 2-3) because no regulated nonattainment pollutant is emitted at a rate of 100 tons per year or more. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

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

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This status is based on the potential to emit calculations of the source (see Appendix A). This is the second air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this registration.
- (b) 40 CFR 63, Subpart ZZZZ (63.6580 through 63.6675)
This source is not subject to the requirements of 40 CFR 63, Subpart ZZZZ (63.6580 through 63.6675), NESHAP for Stationary Reciprocating Internal Combustion Engines (326 IAC 20-82), because this source is not located at and is not part of a major source of HAPs and the diesel-fired generator at this source has a site-rating of less than or equal to 500 brake horsepower.
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 20 and 40 CFR Parts 61, 63) included in this registration.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source was constructed after the applicability date of August 7, 1977 and it is not in one of the 28 listed source categories defined in 326 IAC 2-2-1(gg)(1) and the uncontrolled potential to

emit of all attainment regulated pollutants is less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The requirements of 326 IAC 2-4.1 are not applicable to this source, since the potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Elkhart County, it is not required to have an operating permit under 326 IAC 2-7 (Part 70 Permit Program), and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year.

326 IAC 5-1 (Opacity Limitations)

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

- (a) Opacity shall not exceed an average of forty percent (40%) 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 in a six (6) hour period 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.

326 IAC 6-4 (Fugitive Dust Emissions)

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.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is not subject to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), because it does not require permit under 326 IAC 2.

326 IAC 8-1-6 (VOC)

Each of the emission units at this source are not subject to the requirements of 326 IAC 8-1-6, since they each have the potential to emit VOCs of less than 25 tons per year.

State Rule Applicability - Wood Cutting and Grinding

326 IAC 6-3-2 (Particulate Emission Limitations)

Each of the wood cutting and wood grinding facilities are subject to 326 IAC 6-3-2, since they each have potential particulate emissions greater than 0.551 pounds per hour. Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the woodworking operations shall not exceed the following:

Description	Process Weight Rate (lbs/hr)	Allowable PM Emission Rate (lbs/hour)
Wood Cutting (Line1, Line2)	21,500	20.13
Wood Grinding	13,000	14.36

The allowable rate of emission was calculated as follows:

Interpolation of the data in the table in 326 IAC 6-3-2(e)(2) for the process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

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

When the process weight rate is less than one hundred (100) pounds per hour, the allowable rate of emission is five hundred fifty-one thousandths (0.551) pound per hour.

Potential particulate emissions before control for the wood cutting operations (Line1 and Line2) and the wood grinding are each less than the 326 IAC 6-3-2 allowable particulate emission rate, therefore the control device is not required to comply with 326 IAC 6-3-2(e).

State Rule Applicability – Diesel and Natural Gas Combustion Sources

326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The diesel fired wood grinder WG, and the natural gas-fired heaters are each not subject to 326 IAC 6-2 as they are not sources of indirect heating.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The diesel fired wood grinder WG, and the natural gas-fired heaters are each not subject to the requirements of 326 IAC 6-3, because they are each not considered a part of a manufacturing process as defined by 326 IAC 6-3-1.5(2)

326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

The diesel fired wood grinder WG, and the natural gas-fired heaters are each not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions are each less than twenty-five (25) tons per year and ten (10) pounds per hour, respectively.

Recommendation

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

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

An application for the purposes of this review was received on August 31, 2007, with additional information received on September 26, September 28, October 3, and October 10, 2007.

Conclusion

The operation of this stationary wood pallet manufacturing and recycling operation shall be subject to the conditions of the attached Registration No. 039-25232-00632.

**Appendix A: Emissions Calculations
Emission Summary**

Company Name: Global Group, Inc.
Address City IN Zip: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha

Category	Uncontrolled Potential Emissions (tons/year)						
	Pollutant	(4) Natural Gas	Wood Cutting Operation Line1, Line2	(1) Diesel fired Wood grinder	Material Processing and Handling Fugitive	Wood Grinding	TOTAL
		Space Heaters H2, H3, H4, H5					
Criteria Pollutants	PM	0.01	5.04	0.07	3.36	9.96	18.44
	PM10	0.04	8.98	0.12	0.99	9.96	20.09
	SO2	3.2E-03		2.54			2.55
	NOx	0.53		0.72			1.24
	VOC	0.03		0.01			0.04
	CO	0.44		0.18			0.62
Hazardous Air Pollutant	n-Hexane	9.5E-03					9.5E-03
	Chromium	7.4E-06		1.47E-05			2.2E-05
	Manganese	2.0E-06		2.94E-05			3.1E-05
	Nickel	1.1E-05		1.47E-05			2.6E-05
	Toluene	1.8E-05					1.8E-05
	Benzene	1.1E-05					1.1E-05
	Dichlorobenzene	6.3E-06					6.3E-06
	Formaldehyde	3.9E-04					3.9E-04
	Lead	2.6E-06		4.42E-05			4.7E-05
	Selenium			7.36E-05			7.4E-05
	Beryllium			1.47E-05			1.5E-05
	Mercury			1.47E-05			1.5E-05
	Arsenic			1.96E-05			2.0E-05
	Cadmium	5.8E-06		1.47E-05			2.1E-05
Totals	9.9E-03		2.4E-04			1.0E-02	

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

Category	Controlled Potential Emissions (tons/year)						
	Emissions Generating Activity						
	Pollutant	(4) Natural Gas	Wood cutting operation Line1, Line2	(1) Diesel fired Wood grinder	Material Processing and Handling Fugitive	Wood Grinding	TOTAL
Office Heaters H2, H3, H4, H5							
Criteria Pollutants	PM	0.01	5.04	0.07	1.68	9.96	16.76
	PM10	0.04	8.98	0.12	0.50	9.96	19.60
	SO2	3.2E-03		2.54			2.55
	NOx	0.53		0.72			1.24
	VOC	0.03		0.01			0.04
	CO	0.44		0.18			0.62
Hazardous Air Pollutants	n-Hexane	9.5E-03					9.5E-03
	Chromium	7.4E-06		1.47E-05			2.2E-05
	Manganese	2.0E-06		2.94E-05			3.1E-05
	Nickel	1.1E-05		1.47E-05			2.6E-05
	Toluene	1.8E-05					1.8E-05
	Benzene	1.1E-05					1.1E-05
	Dichlorobenzene	6.3E-06					6.3E-06
	Formaldehyde	3.9E-04					3.9E-04
	Lead	2.6E-06		4.42E-05			4.7E-05
	Selenium			7.36E-05			
	Beryllium			1.47E-05			
	Mercury			1.47E-05			
	Arsenic			1.96E-05			
	Cadmium	5.8E-06		1.47E-05			2.1E-05
Totals	9.9E-03	0.0E+00	2.4E-04			1.0E-02	

Appendix A: Emission Calculations
Combustion Emissions From One (1) 440 HP Wood Grinder

TSD Appendix A: Page 2 of 7

Company Name: Global Group, Inc.
Address: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha

Diesel fired- wood grinder Heat Input Capacity MMBtu/hour
1.12

Potential Throughput kgals/year
71.64

S = Weight % Sulfur

0.50

Pollutant	PM10	PM*	SO2	NOx	VOC	CO
Pollutant Emission Factor (lb/kgal)	3.3	2.0	71 (142.0 S)	20.0	0.34	5.0
Potential To Emit (tons/year)	0.12	0.07	2.54	0.72	0.012	0.18

Hazardous Air Pollutants	Arsenic	Beryllium	Cadmium	Chromium	Lead	Mercury	Manganese	Nickel	Selenium
Emission Factor (lb/MMBtu)	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential To Emit (tons/year)	1.96E-05	1.47E-05	1.47E-05	1.47E-05	4.42E-05	1.47E-05	2.94E-05	1.47E-05	7.36E-05

Additional HAPs emission factors are available in AP-42, Chapter 1.3.
 No data was available in AP-42 for organic HAPs.

METHODOLOGY

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) * 8760 (hours/year) * (1 kgal/1000 gal) * (1 gal/0.137000 MMBtu)
 Potential To Emit (tons/year) = Potential Throughput (kgals/year) * Emission Factor (lb/kgal) * 1 ton/2000 lbs

Potential To Emit (tons/year) = Heat Input Capacity (MMBtu/hr) * Emission Factor (lb/MMBtu) * 8760 hours/year * 1 ton/2000lb
 *PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal. Assume all PM10 emissions to be filterable and condensable.

Note: Emission factors are from AP-42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98.
 1 gallon of No. 2 fuel oil has a heating value of 137,000 Btu per gallon.

**Appendix A: Emission Calculations
Combustion Emissions from the Natural Gas-space Heater**

Company Name: Global Group, Inc.
Address: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha

Description	Total Heat Input Capacity (MMBtu/hr)	Total Max. Potential Throughput (MMCF/yr)
(4) Natural Gas Space Heaters H2, H3, H4, H5	1.2	10.5

Pollutant Emission Factors (lbs/MMCF)					
PM	PM10*	SO ₂	NO _x **	CO	VOC
1.90	7.60	0.60	100	84.0	5.50

Potential To Emit (tons/yr)						
Emission Unit ID	PM	PM10	SO ₂	NO _x	CO	VOC
(4) Natural Gas Space Heaters H2, H3, H4, H5	0.01	0.04	3.2E-03	0.53	0.44	0.03

Hazardous Air Pollutants (HAPs)

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Mangamese	Nickel
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
	Potential Emission tons/yr									
Emission Unit	Benzene	DCB	Formaldehyde	Hexane	Toluene	Lead	Cadmium	Chromium	Mangamese	Nickel
(4) Natural Gas Space Heaters H2, H3, H4, H5	1.1E-05	6.3E-06	3.9E-04	9.5E-03	1.8E-05	2.6E-06	5.8E-06	7.4E-06	2.0E-06	1.1E-05
Totals	1.1E-05	6.3E-06	3.9E-04	9.5E-03	1.8E-05	2.6E-06	5.8E-06	7.4E-06	2.0E-06	1.1E-05

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

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

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

Methodology

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

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

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

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu, MMCF = 1,000,000 Cubic Feet of Gas

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO₂ = Sulfur Dioxide
 DCB = Dichlorobenzene
 NO_x = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 1000 Btu per cubic foot of natural gas

**Appendix A: Emissions Calculations
Material Processing And Handling (Fugitive Emissions)**

**Company Name: Global Group, Inc.
Address: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha**

Material Storage Pile- Wind Erosion

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.

$E_f = 1.7 \cdot (s/1.5)^{0.365} \cdot (365 - p) / 235 \cdot (f/15)$ <p>where E_f = emission factor (lb/acre/day) s = silt content (wt %) p = 125.00 days of rain greater than or equal to 0.01 inches f = 15.00 % of wind greater than or equal to 12 mph</p>

Description	Silt Content (wt %)*	Emission Factor (lb/acre/day)	**Maximum Anticipated Pile Size (acres)	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)
Storage Pile	4.80	5.56	1.00	1.014	0.355
Totals				1.01	0.35

Methodology

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

Limited PTE of PM10 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**NOTE: Emissions from the stock pile are fugitive and are not subject to 326 IAC 6.3-2.

Vehicle Traffic-Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by vehicle traffic on unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

Type	Maximum trips per hour (trip/hr)	Maximum Weight Loaded (tons/trip)	Total Weight driven per hour (ton/hr)	Maximum roundtrip distance (mi/trip)	Maximum miles driven (miles/yr)
**Vehicle traffic-Car/Truck	5.0	15.0	75.0	0.019	832.2

Average Vehicle Weight Per Trip = 15.0 tons/trip
 Average Miles Per Trip = 0.019 miles/trip

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

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Rd.)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	15.0	15.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	
Unmitigated Emission Factor, E_f =	5.32	1.36	lb/mile
Mitigated Emission Factor, E_{ext} =	5.10	1.30	lb/mile
Dust Control Efficiency =	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)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle traffic-Car/Truck**	2.21	0.56	2.12	0.54	1.06	0.27

Methodology

Total Weight driven per hour (tons/hr) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per hour (trip/hr)]

Maximum miles Vehicle driven per year = [Maximum Roundtrip distance (mi/trip)] * [Maximum trips per hour (trips/hr)] * 8760 (hrs/yr)

Unmitigated PTE (tons/yr) = (Maximum roundtrip miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Mitigated PTE (tons/yr) = (Maximum roundtrip miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

**NOTE: Emissions from the Vehicle Traffic are fugitive and are not subject to 326 IAC 6.3-2.

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032) \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where:

- Ef = Emission factor (lb/ton)
- k (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
- k (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
- U = 10.2 = worst case annual mean wind speed (Source: NOAA, 2005*)
- M = 4.0 = material % moisture content
- Ef (PM) = 2.27E-03 lb PM/ton of material handled
- Ef (PM10) = 1.07E-03 lb PM10/ton of material handled

Maximum Material Handling Throughput = 58,867 tons/yr

Type of Activity	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Truck unloading of materials into storage piles	0.07	0.032
Front-end loader dumping of materials into truck	0.07	0.0316
Total (tons/yr)	0.13	0.06

Methodology

Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

*Worst case annual mean wind speed (South Bend, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2005

**NOTE: Emissions from the batch or continuous drop operations are fugitive and are not subject to 326 IAC 6.3-2.

Material Screening and Conveying (AP-42 Section 11.19.2)

To estimate potential fugitive dust emissions from raw material conveying, AP-42 emission factors for Crushed Stone

Operation	Uncontrolled Emission Factor for PM	Uncontrolled Emission Factor for PM10	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Scrap Wood Screening and Conveying	0.00	0.00	0.09	0.03
Potential to Emit (tons/yr) =			0.09	0.03

Methodology

Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PTE = Potential to Emit

**Appendix A: Emission Calculations
Wood Grinding and Fugitive Dust Emissions**

Company Name: Global Group, Inc.
Address: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha

Fugitive Emissions Combined from Pages 4 and 5

Description	Control Description	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)	PTE of PM after control (tons/yr)	PTE of PM10 after control (tons/yr)
Batch or Continuous Drop Operation**	open-water spray	0.13	0.06	0.07	0.03
Scrap Wood Screening & Conveying **	open-water spray	0.09	0.03	0.04	0.02
Wood Chip - Storage Pile- Wind Erosion**	open-water spray	1.01	0.35	0.51	0.18
Vehicle traffic - Car/Truck**	open-water spray	2.12	0.54	1.06	0.27
Total=		3.36	0.99	1.68	0.50

Control Efficiency of conveying and screening, stock pile, and drop operation due to water spray is assumed to be 50%

****NOTE:** Emissions from the conveying and screening, stock pile and Vehicle traffic are fugitive and are not subject to 326 IAC 6.3-2.

Wood Grinding Emissions

Description	Process Throughput (tons/hr)	Emission Factor PM and PM10	PTE Of PM	PTE Of PM10	PTE of PM	Allowable PM Emissions (lbs/hr)
		(lbs/ton)	(tons/yr)	(tons/yr)	(lbs/hr)	
Wood Grinding	6.5	0.35	9.96	9.96	2.28	14.37

*Emissions Factor provided by the applicant are more conservative than the fine particles tertiary crushing

Methodology:

PTE of PM/PM10 (tons/yr)= Maximum Process Throughput (tons/hr) * Emission Factor (lbs/ton) * 8760 (hrs/yr) * 1 (ton/2000lbs)

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PTE = Potential to Emit

Compliance with 326 IAC 6-3-2:

Allowable Emissions, E = $4.10 * P^{0.67}$ (for weight rates up to 60,000 lb/hr)
where E = emissions in lbs/hr P = process weight in tons/hr P = 6.50 tons/hr
Allowable PM Emissions, E = 14.37 lbs/hr

**Appendix A: Emissions Calculations
Wood Cutting Operations (Line1 & Line2)**

**Company Name: Global Group, Inc.
Address City IN Zip: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha**

Description	Production Throughput Cubic feet/hr	*Emission factor PM lbs/1000cubic feet	*Emission factor PM10 lbs/1000 cubic feet	PTE of PM lbs/hr	PTE of PM10 lbs/hr	PTE of PM10 tons/yr	PTE of PM tons/yr	Allowable PM Emissions lbs/hr
Wood cutting Line1 Line2	5000.00	0.23	0.41	1.15	2.05	8.98	5.04	20.13

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

*Emission Factors from EPA's Factor Information Retrieval (FIRE) Data System - EPA, September 2002, Section 10.9, Engineered Wood Products Manufacturing. -Compilation of Air Pollutant Emission Factors, Volume 1; Stationary Point and Area Sources, AP-42

SCC # 30701661

Methodology:

PTE of PM/PM10 (tons/yr)= Maximum Throughput (cubic ft/hr)*Emission Factor PM/PM10 (lbs/1000cubic ft)*(8760 hrs/yr)*(1/2000 lbs/ton)*1/1000

Compliance with 326 IAC 6-3-2:

<p>Allowable Emissions, $E = 4.10 * P^{0.67}$ (for weight rates up to 60,000 lb/hr)</p> <p>where $E =$ emissions in lbs/hr $P =$ process weight in tons/hr $P =$ 21500.00 lbs/hr $=$ 10.750 tons/hr</p> <p>Allowable PM Emissions, $E =$ 20.13 lbs/hr</p>
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Attachment A
Fugitive Dust Control Plan
28-Sep-07

Page 1 of 2

Company Name: Global Group, Inc.
Address: 54722 Chelsea Court, Elkhart, IN 46516
Registration No.: R039-25232-00632
Reviewer: Swarna Prabha

Section 1 - Introduction

The following Fugitive Dust Control Plan, when implemented, is designed to reduce uncontrolled fugitive dust generated from conveying, grinding and screening of wood scrap, material storage piles and unpaved roadways and areas.

The plan shall be implemented on a year-round basis until such a time as another plan is approved or ordered by the Indiana Department of Environmental Management.

The person on site who is responsible for implementing this plan is:

Global Group, Inc.
Rick Willis, Operations Manager
54722 Chelsea Court
Elkhart, Indiana 46516

Section 2 - Outdoor Grinding and Screening

The following shall control fugitive particulate matter emissions from the outdoor grinding and screening of "scrap" wood:

- (a) Water spray application, as necessary, to the raw material prior to introduction into the grinder to prevent visible fugitive dust.

- (b) Grinding and screening will only be conducted during times when the average wind speed is below fifteen (15) mph. Wind speed and visible emissions will be monitored routinely during outdoor grinding and screen activities. In the event that wind speeds exceed fifteen (15) mph during outdoor grinding and screening activities, outdoor grinding activities shall be discontinued until wind speeds drop to below fifteen (15) mph.

- (c) Outdoor grinding and screening will be conducted a maximum of ten (10) hours per day.

Section 3 - Material Handling

Skid loaders and front-end loaders will be used to maintain the aggregate storage piles. Fugitive particulate matter from loading and unloading of outdoor aggregate storage piles shall be controlled by the following:

- (a) Spray application of water, as necessary, shall be applied during the loading and unloading process.
- (b) Reduction of the free fall distance between the loading equipment and the transportation equipment.

Section 4 - Open Aggregate Storage Piles

Open aggregate storage piles will consist of only future landscape mulch and scrap wood. The use of water spray as a dust suppressant shall be the primary means of dust control. Water shall be applied, as necessary, to the aggregate storage piles to prevent emissions of fugitive particulate matter from crossing off Global Group, Inc. property.

Section 5 - Unpaved Roads and Areas

Unpaved roads and areas at the source shall be coated with water, as necessary, for dust control to prevent fugitive dust generated from vehicle travel from crossing off Global Group, Inc. Property.

Section 6 - Monitoring and Record Keeping

Records shall be kept which will identify the atmospheric conditions, general maintenance activities, and visible observation made in accordance with this fugitive dust control plan. A log of this information shall be kept and made available to regulatory officials upon request. The following information shall be included with each log entry:

- (a) Outdoor Grinding, Screening and Storage
 - (1) Name of employee conducting visible observations
 - (2) Average wind speed during outdoor grinding activities
 - (3) Daily hours of operation for outdoor grinding and screening activities
- (b) Unpaved Roads, Areas, and Aggregate Storage Piles
 - (1) Name of employee conducting visible observations
 - (2) Dates and times when water is applied
 - (3) Dates and times of visible observations

Section 7 - Compliance Schedule

This plan shall be fully implemented when instillation of the outdoor grinding operations is complete. In the event that adverse conditions arise, appropriate control measures shall be implemented. The outdoor grinding activities will be stopped if conditions exist that will not allow for the comprehensive control of visible particulate matter. These instances shall be noted in the monitoring log.