



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: November 12, 2009

RE: Musket Corporation / 089-28552-05335

FROM: Matthew Stuckey, Branch 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, 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.

Enclosures
FN-REGIS.dot 1/2/08



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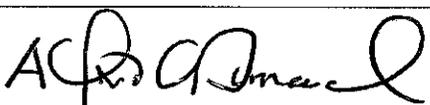
100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
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REGISTRATION OFFICE OF AIR QUALITY

Musket Corporation (portable)

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 089-28203-05335	
Original signed by: Alfred C. Dumauval, Ph.D., Section Chief Permits Branch Office of Air Quality	Issuance Date: August 19, 2009

First Registration Revision No. 089-28552-05335	
Issued by:  Alfred C. Dumauval, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: November 12, 2009

SECTION A

SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a portable diesel, biodiesel, and ethanol transloading facility.

Source Address:	Indiana Harbor Belt Railroad at 2721-161st Street, Hammond, Indiana 46323
Mailing Address:	PO Box 26210, Oklahoma City, OK 73120
General Source Phone Number:	(405) 302-6533
SIC Code:	5172
County Location:	Lake County
Source Location Status:	Nonattainment for 8-hour ozone standard Nonattainment for PM 2.5 standard Attainment for all other criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) diesel-powered transloader unit, identified as Transloader 1, constructed in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of diesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (b) One (1) diesel-powered transloader unit, identified as Transloader 2, approved for construction in 2009, with a maximum engine capacity of 61 horsepower, with a maximum transfer capacity of 16,000 gallons of diesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (c) One (1) diesel-powered transloader unit, identified as Transloader 3, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of biodiesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (d) One (1) diesel-powered transloader unit, identified as Transloader 4, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of ethanol per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (e) Fugitive emissions from unpaved roads.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration 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 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

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

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 089-28203-05335 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 registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 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, IN 46204-2251

- (c) The notification 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.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

Portable Source Requirements

B.8 Relocation of Portable Sources [326 IAC 2-14-4]

- (a) This registration is approved for operation all attainment areas for ozone in Indiana and in Lake County and Porter County which is classified as severe nonattainment for ozone. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2, and Emission Offset requirements in 326 IAC 2-3. Prior to locating in any other severe nonattainment area, the Permittee must submit a request and obtain a registration revision.
- (b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:
- (1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1
 - (2) A list of adjacent landowners that the Registrant will send written notice to not (b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:
 - (1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1
 - (2) A list of adjacent landowners that the Permittee will send written notice to not more than ten (10) days after submission of the request to relocate. IC 13-15-8
 - (3) The new location address of the portable source.
 - (4) Whether or not this portable source will be relocated to another source.
 - (5) If relocating to another source:
 - (A) Name, location address, and permit number of the source this portable source is relocating to.

(B) Whether or not the sources will be considered as one source. See Non Rule Policy (NRP) Air-005 and Air-006.

(6) If the sources will be considered as one source, whether or not the source to be relocated to has received the necessary approvals from IDEM to allow the relocation.

The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) A "Relocation Site Approval" letter shall be obtained prior to relocating.

(d) A valid registration consists of this document and any subsequent "Relocation Site Approval" letter specifying the current location of the portable plant.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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, unless otherwise stated in this registration:

- (a) Opacity shall not exceed an average of twenty percent (20%) 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.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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.3 Fugitive Dust Emissions [326 IAC 6.8-10-3]

Pursuant to 326 IAC 6.8-10-3 (formerly 326 IAC 6-1-11.1) (Lake County Fugitive Particulate Matter Control Requirements), the particulate matter emissions from source wide activities shall meet the following requirements:

- (a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (c) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
- (d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.
- (g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (h) The PM10 stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grain per dry standard cubic foot and ten percent (10%) opacity.

- (i) The opacity of fugitive particulate emissions from a material processing facility, except crusher at which a capture system is not used, shall not exceed ten percent (10%).
- (j) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).
- (k) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
- (l) The PM10 emissions from a material processing facility building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (m) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (n) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the Fugitive Dust Control Plan, which is included as Attachment A.

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

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Musket Corporation
Address:	Indiana Harbor Belt Railroad at 2721-161st Street
City:	Hammond, IN 46323
Phone Number:	(405) 302-6533
Registration No.:	089-28203-05335

I hereby certify that Musket Corporation is :

- still in operation.
- no longer in operation.
- in compliance with the requirements of Registration No. 089-28552-05335.
- not in compliance with the requirements of Registration No. 089-28552-05335.

I hereby certify that Musket Corporation is :

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

**PORTABLE SOURCE RELOCATION NOTIFICATION
CERTIFICATION**

Source Name: Musket Corporation
Source Address: Indiana Harbor Belt Railroad at 2721-161st Street, Hammond, IN 46323
Mailing Address: P.O. Box 26210, Oklahoma City, Oklahoma 73120
Registration No.: 089-28203-05335

This certification shall be included when submitting a portable source relocation notification as required by this registration.

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

Signature:

Printed Name:

Title/Position:

Phone Number:

Date:

ATTACHMENT A

**Fugitive Dust Control Plan
Approved August 14, 2009**

MUSKET CORPORATION

Hammond Indiana Transload Facility

I. INTRODUCTION

The following control plan is designed to reduce uncontrolled fugitive dust from roadways (travel areas).

This plan is in effect on a year-round basis to reduce uncontrolled fugitive dust. The site supervisor is responsible for implementing the control methods, as required, at the Musket Corporation Transload facility.

II. FACILITY INFORMATION

The following is the physical address and mailing address of the facility for the Musket Hammond Transload Facility:

Indiana Harbor Belt Railroad
2721 - 161 Street
Hammond, IN 46323

Musket Corporation is a privately held corporation. Mr. Peter Prizo (Manager),
or
his designee will provide direction and oversight regarding the execution of this control plan. All related correspondence should be mailed to Michael Key at the following address:

Musket Corporation
Attention: Michael B. Key
10601 N. Pennsylvania Ave.
Oklahoma City, OK 73120

Telephone: 405.302.6640
Facsimile: 405.749.9155
michaelk@loves.com

III. PROCESS DESCRIPTION

The Musket process physically transloads petroleum products among railroad tanker cars and tanker trucks. The primary pieces of equipment used in the process are a self-contained transloader trailer, railroad tanker cars and tanker trucks.

IV. GENERAL FUGITIVE EMISSIONS SOURCES

Visible emissions from any paved or unpaved area shall not exceed 10-percent opacity as averaged over any consecutive 6-minute period. All visible emission observations shall be determined in accordance with 326 IAC 6-1-11(d).

Unpaved Roads and Traffic Areas

The roads leading to the Musket facility are unpaved and maintained by the Indiana Harbor Belt Railroad. Fugitive dusts from unpaved roads and parking lots are controlled by application of water whenever there is the potential of fugitive dust escaping beyond the property boundary, right-of-way or easement. Watering is performed, on an as needed basis, to maintain fugitive particulate emissions below the acceptable opacity specified by 326 IAC 6-4 and 326 IAC 6.8-10 (Lake County Fugitive Particulate Matter).

Treatment of unpaved areas is delayed when:

- There is no potential of fugitive dust exceeding the opacity standard:

Pursuant to 326 IAC 6.8-10-3, the particulate matter emissions from source-wide activities shall meet the following requirements:

- The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).*
- The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).*
- The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).*
- The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.*
- The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.*

- (f) *There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.*
- (g) *The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).*
- (h) *There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.*
- (i) *The PM₁₀ emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.*
- (j) *The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).*
- (k) *Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.*

- 0.1 or more inches of rain have accumulated during the 24-hour period prior to the scheduled treatment, or
- It is raining, or
- Unpaved areas are frozen or covered by ice, snow, or standing water, or
- The facility is not in use, or
- The area is closed or abandoned

V. SPECIFIC FUGITIVE EMISSION SOURCES

The following is a list of the process operations that may result in the generation of particulate emissions:

- Tanker truck ingress and egress to the site

VI. CONTROL MEASURES

With regard to transloading process operations, little or no potential exists for fugitive dust.

The site supervisor will determine the applicability of control measures on a day-to-day basis, primarily dependent on weather conditions. As required, watering will be implemented in the morning, prior to beginning process operations. Musket personnel will also be instructed to remain aware of potential changes throughout the day (i.e. drying, wind) that may require application, or reapplication of water to suppress dust.

VII. SCHEDULE

This Control Plan is in effect during all days of transloading operations at the Musket facilities. Any modification of this Control Plan, as warranted by process changes, will require submission to the controlling authority for approval prior to implementation.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration Revision

Source Description and Location

Source Name:	Musket Corporation
Source Location:	Indiana Harbor Belt Railroad at 2721-161st Street, Hammond, Indiana 46323
County:	Lake
SIC Code:	5172
Registration No.:	089-28203-05335
Registration Issuance Date:	August 19, 2009
Registration Revision No.:	089-28552-05335
Permit Reviewer:	Summer Keown

On October 9, 2009, the Office of Air Quality (OAQ) received an application from Musket Corporation related to a modification to an existing portable diesel, biodiesel, and ethanol transloading facility.

Existing Approvals

The source was issued Registration No. 089-28203-05335 on August 19, 2009.

County Attainment Status

The source is located in Lake County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of East Chicago bounded by Columbus Drive on the north; the Indiana Harbor Canal on the west; 148 th Street, if extended, on the south; and Euclid Avenue on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of East Chicago and Lake County.
O ₃	Nonattainment Subpart 2 Moderate effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Attainment effective March 11, 2003, for the cities of East Chicago, Hammond, Whiting, and Gary. Unclassifiable effective November 15, 1990, for the remainder of Lake County.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Nonattainment Severe 17 effective November 15, 1990, for the Chicago-Gary-Lake County area for the 1-hour ozone standard which was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for PM2.5.	

(a) Ozone Standards

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.

(i) 1-hour ozone standard

On December 22, 2006 the United States Court of Appeals, District of Columbia issued a decision which served to partially vacate and remand the U.S. EPA's final rule for implementation of the eight-hour National Ambient Air quality Standard for ozone. *South Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882 (D.C. Cir., December 22, 2006), *rehearing denied* 2007 U.S. App. LEXIS 13748 (D.C. Cir., June 8, 2007). The U.S. EPA has instructed IDEM to issue permits in accordance with its interpretation of the *South Coast* decision as follows: Gary-Lake-Porter County was previously designated as a severe non-attainment area prior to revocation of the one-hour ozone standard, therefore, pursuant to the anti-backsliding provisions of the Clean Air Act, any new or existing source must be subject to the major source applicability cut-offs and offset ratios under the area's previous one-hour standard designation. This means that a source must achieve the Lowest Achievable Emission Rate (LAER) if it exceeds 25 tons per year of VOC emissions and must offset any increase in VOC emissions by a decrease of 1.3 times that amount.

On January 26, 1996 in 40 CFR 52.777(i), the U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NOx threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.

(ii) 8-hour ozone standard

VOC and NOx emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability – Entire Source section.

(b) PM2.5

U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Lake County as nonattainment for PM2.5. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM2.5 promulgated on May 8, 2008, and effective on July 15, 2008. Therefore, direct PM2.5 and SO2 emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Lake 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

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) 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:

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)								
	PM	PM10	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Diesel Combustion	0.24	0.24	0.24	0.22	3.39	0.27	0.73	negl.	negl. (formaldehyde)
Diesel Loading Loss	-	-	-	-	-	1.41	-	0.94	0.44 (toluene)
Fugitive Emissions (Unpaved Roads)	19.72	5.03	5.03	-	-	-	-	-	-
Total PTE of the Entire Source	19.96	5.27	5.27	0.22	3.39	1.68	0.73	0.94	0.44 (toluene)
Exemptions Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible These emissions are based upon the TSD for Registration No. 089-28203-05335.									

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Musket Corporation on October 9, 2009, relating to the addition of three (3) additional transloader units.

The following is a list of the new emission units:

- (a) One (1) diesel-powered transloader unit, identified as Transloader 2, approved for construction in 2009, with a maximum engine capacity of 61 horsepower, with a maximum transfer capacity of 16,000 gallons of diesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (b) One (1) diesel-powered transloader unit, identified as Transloader 3, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of biodiesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.
- (c) One (1) diesel-powered transloader unit, identified as Transloader 4, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of ethanol per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendix A, pages 1 through 10, of this TSD for detailed emission calculations.

Permit Level Determination – Registration Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-5.5-6. This table reflects the PTE before controls of the proposed revision.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Diesel Combustion	0.10	0.10	0.10	0.10	0.12	0.12	0.31	negl.	negl.
Ethanol Loading Loss	0.00	0.00	0.00	0.00	0.00	19.51	0.00	0.02	0.09 (toluene)
Biodiesel Loading Loss	0.00	0.00	0.00	0.00	0.00	0.11	0.00	negl.	negl.
Total PTE of Proposed Revision	1.16	1.16	1.16	1.09	16.3	20.92	3.51	0.02	0.09 (toluene)

negl. = negligible
 * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

This Registration is being revised through a Registration Revision pursuant to 326 IAC 2-5.5.6(g), because the revision involves the construction and operation of additional emission units, which are not described in 326 IAC 2-5.5.6(d) (Registration Notice-Only Changes).

PTE of the Entire Source After Issuance of the Registration 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.

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Diesel Combustion	0.24 0.34	0.24 0.34	0.24 0.34	0.22 0.32	3.39 4.83	0.27 0.39	0.73 1.04	negl.	negl.
Diesel Loading Loss	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.94	0.44 (toluene)
Ethanol Loading Loss	0.00	0.00	0.00	0.00	0.00	19.51	0.00	0.09	0.02 (toluene)
Biodiesel Loading Loss	0.00	0.00	0.00	0.00	0.00	0.11	0.00	negl.	negl.
Fugitive Emissions (Unpaved Roads)	19.72	5.03	5.03	0.00	0.00	0.00	0.00	0.00	0.00
Total PTE of Entire Source	19.96 20.06	5.27 5.37	5.27 5.37	0.22 0.32	3.39 4.83	1.68 21.41	0.73 1.04	0.94 1.03	0.44 0.46 (toluene)

Process/ Emission Unit	Potential To Emit of the Entire Source with the Revision (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Exemptions Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".									

The table below summarizes the potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted)

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Diesel Combustion	0.34	0.34	0.34	0.32	4.83	0.39	1.04	negl.	negl.
Diesel Loading Loss	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.94	0.44 (toluene)
Ethanol Loading Loss	0.00	0.00	0.00	0.00	0.00	19.51	0.00	0.09	0.02 (toluene)
Biodiesel Loading Loss	0.00	0.00	0.00	0.00	0.00	0.11	0.00	negl.	negl.
Fugitive Emissions (Unpaved Roads)	19.72	5.03	5.03	0.00	0.00	0.00	0.00	0.00	0.00
Total PTE of Entire Source	20.06	5.37	5.37	0.32	4.83	21.41	1.04	1.03	0.46 (toluene)
Exemptions Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".									

- (a) This revision will not change the registration status of the source, because the uncontrolled/unlimited potential to emit of all criteria pollutants from the entire source will still be within the ranges listed in 326 IAC 2-5.5-1(b)(1) and the PTE of all other regulated criteria pollutants will still be less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source will still be subject to the provisions of 326 IAC 2-5.5 (Registrations).
- (b) This revision will not change the minor status of the source, because the uncontrolled/unlimited potential to emit of any single HAP will still be less than ten (10) tons per year and the PTE of a combination of HAPs will still be less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

The federal rules applicable to the existing emission units at this source will not change as a result of this revision.

The federal rule applicability for this revision is as follows:

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Bulk Gasoline Terminals (40 CFR 60, Subpart XX) (326 IAC 12) are not included in the permit for the three (3) diesel-powered transloader units, identified as Transloaders 2, 3, and 4, since these facilities are not loading racks at a bulk gasoline terminal which delivers liquid product into gasoline tank trucks. This source does not meet the definition of bulk gasoline terminal because it does not receive gasoline by pipeline, ship, or barge.
- (b) The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII) (326 IAC 12) are not included in the permit for the three (3) diesel engines since these emission units do not meet the definition of stationary compression ignition (CI) internal combustion engines (ICE) under 40 CFR 60.4219. These diesel engines are considered nonroad engines, as defined at 40 CFR 1068.30(1)(iii).
- (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) The requirements of the National Emission Standards for Hazardous Air Pollutants for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) (40 CFR Part 63, Subpart R) (326 IAC 20-10) are not included in the permit for the three (3) diesel-powered transloaders units since the facilities are not bulk gasoline terminals or pipeline breakout stations. This source does not meet the definition of bulk gasoline terminal because it does not receive gasoline by pipeline, ship, or barge.
- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) (326 IAC 20-82) are not included in the permit for the three (3) diesel engines since these emission units do not meet the definition of stationary reciprocating internal combustion engines (RICE) under 40 CFR 63.6675. The diesel engines are considered nonroad engines, as defined at 40 CFR 1068.30(1)(iii).
- (f) 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)

- (g) 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 state rules applicable to the existing emission units at this source will not change as a result of this revision.

The following state rules are applicable to the proposed revision:

- (a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 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 three (2) transloaders 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.
- (c) 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 located in Lake County, it has actual emissions of NO_x and VOC of less than twenty-five (25) tons per year, 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.
- (d) 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 twenty percent (20%) 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.
- (e) 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.
- (f) 326 IAC 6.8-10 (Lake County: Fugitive Particulate Matter)
Due to this revision, the source is subject to the requirements of 326 IAC 6.8-10, because the unpaved roads have potential fugitive particulate emissions greater than 5 tons per year.

Pursuant to 326 IAC 6.8-10-3, the particulate matter emissions from source wide activities shall meet the following requirements:

- (1) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (2) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (3) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
- (4) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.

- (5) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (6) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.
- (7) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (8) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
- (9) The PM₁₀ emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
- (10) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (11) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the Fugitive Dust Control Plan, approved on August 14, 2009, which is included as Attachment A to the permit.

Transloaders

- (g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The proposed revision is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each transloader is less than twenty-five (25) tons per year.
- (h) 326 IAC 8-4-4 (Bulk Gasoline Terminals)
This source is not subject to the requirements of 326 IAC 8-4-4 (Bulk Gasoline Terminals) because it is not a bulk gasoline terminal.
- (i) 326 IAC 8-4-6 (Gasoline Dispensing Facilities)
This source is not subject to the requirements of 326 IAC 8-4-6 (Gasoline Dispensing Facilities) because gasoline is not dispensed into motor vehicle fuel tanks or portable containers at this source.
- (j) 326 IAC 8-4-7 (Gasoline Transports)
This source is not subject to the requirements of 326 IAC 8-4-7 (Gasoline Transports) because gasoline is not transferred between transports and storage tanks at this source.
- (k) 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake/Porter/Clark/Floyd Counties)
None of the emission units at this source are subject to the requirements of 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake/Porter/Clark/Floyd Counties) since none of the emission units emit or have the potential to emit VOCs at levels equal to or greater than twenty-five (25) tons per year.
- (l) There are no other 326 IAC 8 Rules that are applicable to the transloaders.

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:

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) diesel-powered transloader unit, ~~approved for construction~~ **constructed** in 2009, with a maximum engine capacity of 25 horsepower, a maximum transfer capacity of 400 ~~gallons of diesel per minute~~ **16,000 gallons of diesel per hour**, using vapor balancing as ~~for~~ **for** VOC and HAP control, ~~and~~ **and** exhausting outdoors.
- (b) **One (1) diesel-powered transloader unit, identified as Transloader 2, approved for construction in 2009, with a maximum engine capacity of 61 horsepower, with a maximum transfer capacity of 16,000 gallons of diesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.**
- (c) **One (1) diesel-powered transloader unit, identified as Transloader 3, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of biodiesel per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.**
- (d) **One (1) diesel-powered transloader unit, identified as Transloader 4, approved for construction in 2009, with a maximum engine capacity of 25 horsepower, with a maximum transfer capacity of 16,000 gallons of ethanol per hour, using vapor balancing for VOC and HAP control, exhausting outdoors.**
- (e) ~~(b)~~ Fugitive emissions from unpaved roads.

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 October 9, 2009.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed Registration Revision No. 089-28552-05335. The staff recommends to the Commissioner that this Registration Revision be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Summer Keown 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) 234-5175 or toll free at 1-800-451-6027 extension 4-5175.
- (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.idem.in.gov

Appendix A: Emissions Calculations

Company Name: Musket Corporation
Address City IN Zip: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 4631
Permit No.: 089-28552-05335
Reviewer: Summer Keown
Date: October 26, 2009

Uncontrolled Potential to Emit (tons per year)

Emissions Unit	PM	PM10	PM2.5	SO₂	NOx	VOC	CO	Single HAP	Total HAPs
Diesel Combustion	0.34	0.34	0.34	0.32	4.83	0.39	1.04	negl.	4.23E-03
Diesel Loading Loss	-	-	-	-	-	1.41	-	0.44 (toluene)	0.94
Ethanol Loading Loss	-	-	-	-	-	19.51	-	0.02 (toluene)	0.09
Biodiesel Loading Loss	-	-	-	-	-	0.11	-	negl.	negl.
Paved and Unpaved Roads	19.72	5.03	5.03	-	-	-	-	-	-
Total	20.06	5.37	5.37	0.32	4.83	21.41	1.04	0.46 (toluene)	1.03

Controlled Potential to Emit (tons per year)

Emissions Unit	PM	PM10	PM2.5	SO₂	NOx	VOC	CO	Single HAP	Total HAPs
Diesel Combustion	0.34	0.34	0.34	0.32	4.83	0.39	1.04	negl.	4.23E-03
Diesel Loading Loss	-	-	-	-	-	0.14	-	0.04 (toluene)	0.09
Ethanol Loading Loss	-	-	-	-	-	1.90	-	negl.	0.01
Biodiesel Loading Loss	-	-	-	-	-	0.11	-	negl.	negl.
Fugitive Emissions from Paved and Unpaved Roads	9.86	2.51	2.51	-	-	-	-	-	-
Total	10.20	2.86	2.86	0.32	4.83	2.53	1.04	0.04 (toluene)	0.10

Appendix A: Emissions Calculations

Company Name: Musket Corporation
 Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
 Registration No.: 089-28552-05335
 Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
 Date: October 26, 2009

DATA INPUTS

Physical Address	South Gibson Yard
Longitude	87° 28' 38.06" W
Latitude	41° 36' 12.24" N

1152' NORTH TRACK
 1157' SOUTH TRACK

NOTE: GREEN cells are INPUT entries

Product	Spec. Gravity	Product Usage					
		lb/gal	lb/gal	gal/year	lb/year	gal/hour	lb/hr
Diesel	0.845	8.34	7.05	76,650,000	540,175,545	16,000	225,514
Biodiesel	0.88	8.34	7.34	7,665,000	56,254,968	16,000	117,427
Ethanol	0.79	8.34	6.59	45,990,000	303,009,714	16,000	105,418
Total				130,305,000	899,440,227		448,359

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Max Temp (°F)	30.7	36.1	47.4	59.2	71.3	80.8	84.7	82.3	75.1	63.2	48	35.6

TEMPERATURE

Mean Maximum Monthly Temperature (°F)	59.5
Maximum Monthly Maximum (°F)	84.7

source of temperature data:
http://mrcc.isws.uiuc.edu/climate_midwest/historical/temp/111577_tsum.html

PRODUCTS

COMPONENTS	Product %	Barrels/day	Barrels/yr	Gallons/ Bbl	Gal/day	Days/year	Gallons/yr	Pumping Rate (gal/min)	Transloader HP	Max. Single Transloader Rate (gal/hr)
Diesel	100	5000	1825000	42	210000	365	76,650,000	800	25	32000
Denatured Ethanol (2.5% Gasoline)	-	3000	1095000	42	126000	365	45,990,000	400	61	16000
	Ethanol: 97.5	-	-	-	-	-	-	-	-	-
	Gasoline: 2.5	-	-	-	-	-	-	-	-	-
Bio Diesel with 0.1 % Diesel	-	500	182500	42	21000	365	7,665,000	400	25	16000
	Bio Diesel: 99.9	-	-	-	-	-	-	-	-	-
	Diesel: 0.1	-	-	-	-	-	-	-	-	-
4 Denatured Ethanol (2.5% Gasoline)	-	-	0	42	0	365	0	400	-	0
	Ethanol	97.5	-	-	-	-	-	-	-	-
	Gasoline	2.5	-	-	-	-	-	-	-	-
5 Gasoline	100	-	0	42	0	365	0	400	-	0
6 E10	-	-	0	42	0	365	0	400	-	0
	Ethanol	10	-	-	-	-	-	-	-	-
	Gasoline	90	-	-	-	-	-	-	-	-
7 Transmix (Gasoline/Diesel)	-	-	0	42	0	365	0	400	-	0
	Gasoline (In Transmix)	50	-	-	-	-	-	-	-	-
	Diesel (In Transmix)	50	-	-	-	-	-	-	-	-
8 Bio Diesel with 0.1% Diesel	-	-	0	42	0	365	0	400	-	0
	Bio Diesel	99.9	-	-	-	-	-	-	-	-
	Diesel	0.1	-	-	-	-	-	-	-	-
9 Used Motor Oil	100	-	0	42	0	365	0	400	-	0
TOTALS		8,500	3,102,500		357,000		130,305,000			

LOADING SPECIFICATIONS		
Parameter	Rate	Units
Max Pumping Rate	800	gal/min
Min Pumping Rate	400	gal/min
Rail Car Capacity	30,000	Gallons
Tank Truck Capacity	8,000	Gallons
Max. Single Transloader Rate (2 Trucks/hr)	16,000	Gal/hour

DIESEL EQUIPMENT TRANSLOADER ASSUMPTIONS		
Total Product Volume	8,500	Barrels/Day (Total)
Barrel Volume	42	Gallons/Barrel
Total Product Volume	357,000	Gallons/Day (Total)
Operating Days	7	Days/Week
Annual Product Volume	130,305,000	Gallons/Year (Total)
Max Pumping Rate	800	Gallons/Minute
Rail Car Capacity	30,000	Gallons
Tank Truck Capacity	8,000	Gallons
Minimum Annual Transloading Hours	2,714.69	Hr/Yr
Minimum Total Daily Transloading Hours	7.44	Hr/day (QA/QC Check)
Maximum Single Transloader Rate (2 Trucks/Hour)	16,000	Gallons/Hour
Maximum Operation Per Transloader	24	Hours/Day
Maximum Operation Per Transloader	8,760	Hours/Year
Number of Transloaders	4	units

PROCESS EFFICIENCY			
Product	Vapor Capture Efficiency (%)	Vapor Recovery Efficiency (%)	Total Efficiency
1 Natural Gas Condensate	0.00%	0.00%	0.00%
2 Crude Oil	0.00%	0.00%	0.00%
3 Bio Diesel with 0.1 % Diesel	95.00%	95.00%	90.25%
4 Denatured Ethanol (2.5% Gasoline)	95.00%	95.00%	90.25%
5 Gasoline	0.00%	0.00%	0.00%
6 E10	0.00%	0.00%	0.00%
7 Transmix (Gasoline/Diesel)	0.00%	0.00%	0.00%
8 Bio Diesel with 0.1% Diesel	0.00%	0.00%	0.00%
9 Used Motor Oil	0.00%	0.00%	0.00%

Emission Terms at Operating Efficiencies			
UNCONTROLLED Emissions	0.00%	CONTROLLED Emissions	90.25%

TRANSLOADER SPECS						
Transloader Number	HP	Model No.	Family No.	Serial No.	Cylinders	Fuel
1	25	-	-	-	-	ULSD
2	61	-	-	-	-	ULSD
3	25	-	-	-	-	ULSD
4	25	-	-	-	-	ULSD

Methodology

Total Process Efficiency = Vapor Capture Efficiency (%) * Vapor Recovery Efficiency (%)
 Total Product Volume (gal/day) (total) = Total Product Volume (barrels/day) (total) * Barrel Volume (gal/barrel)
 Minimum Annual Transloading Hours (hr/yr) = Annual Product Volume (gal/yr) (total) / Max Pumping Rate (400 gal/min) * (1 hr/60 min)
 Minimum Total Daily Transloading Hours = Minimum Annual Transloading Hours (hr/yr) / (365 days/yr)

DIESEL EQUIPMENT EMISSIONS

Transloader Transfer Pumping

Company Name: Musket Corporation

Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323

Registration No.: 089-28552-05335

Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown

Date: October 26, 2009

Annual Throughput

Component	Barrels/day	Gal/day	Gal/yr	Weighted Average Pumping Rate (GPM)	Minimum Annual Operating Hours (hr/yr)	Weighted Average Engine HP	Maximum Annual Operating Hours (hr/yr)
Total	8,500	357,000	130,305,000	635	5429	35.59	8760

Transloader	Product	Transloader HP	gal/yr	GPM	min/hr	Hr/yr
1	Diesel Fuel	25	38,325,000	400	60	1596.9
2	Diesel Fuel	61	38,325,000	400	60	1596.9
3	Biodiesel	25	7,665,000	400	60	319.4
4	Ethanol	25	45,990,000	400	60	1916.3
		35.59	130,305,000			5429.38
		Wt Average	Total			Total

Emission Calculations Using Weighted Average Transloader HP					
Pollutant	Emission Factors	Annual Average Equipment Emissions			
		Annual Throughput Base on 130.3 MM Gal/Yr			
		hr/yr	lb/yr	lb/ton	TPY
NOx	3.100E-02	8760	9664	2000	4.83
CO	6.680E-03	8760	2083	2000	1.04
SO2	2.050E-03	8760	639	2000	0.32
VOC	2.470E-03	8760	770	2000	0.39
PM/PM-10/PM2.5	2.200E-03	8760	686	2000	0.34

Benzene	6.53E-06	8760	2.04	2000	1.02E-03
Toluene	2.86E-06	8760	0.89	2000	4.46E-04
Xylene	2.00E-06	8760	0.62	2000	3.11E-04
1,3-Butadiene	2.74E-07	8760	0.09	2000	4.27E-05
Formaldehyde	8.26E-06	8760	2.58	2000	1.29E-03
Acetaldehyde	5.37E-06	8760	1.67	2000	8.37E-04
Acrolein	6.48E-07	8760	0.20	2000	1.01E-04
Total PAH HAPs**	1.18E-06	8760	0.37	2000	1.83E-04
Total HAPs			8.45		4.23E-03

*PM is assumed to be equal to PM10 and PM2.5.

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

Methodology

Potential emissions (lb/yr) = Emission Factor * Transloader HP (weighted average) * 8760 hours/year

Potential emissions (tons/yr) = Potential emissions (lb/yr) / 2000 lb/ton

Emission Factors are from AP 42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2.

Hours based on 8760 hour per year although the number of hours to transload total volume of products is 5429 hours per year.

AP-42 factors were used to calculate potential emissions. However, actual emissions will be based on 40 CFR 60 Subpart IIII requirements which are subject to actual engine horsepower and year of engine construction of the diesel engine. AP-42 factors were used to model the worst case scenario.

Company Name: Musket Corporation
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 Date: October 26, 2009

ULSD/LSD Diesel Loading Loss
 AP-42, Volume 1, Fifth Edition, January 1995, Section 5.2: Transportation and Marketing of Petroleum Liquids

Loading Loss (L_L) = 12.46 (SPM/T) L _L = Loading loss (lb/1000 gallons of product loaded) S = Saturation factor P = True vapor pressure of liquid loaded, pounds per square inch absolute (psia) M = Molecular weight of vapors (lb/lb-mole) T = Temperature of bulk liquid loaded (°R)		Variables	
		Hourly	Annual
CONTROLLED Bottom Loading, Dedicated		0.01	0.004
		1.0	1.0
		0.03	0.015
		108	105
		544.70	519.53

Methodology

Saturation factor (S) from US EPA's AP 42, Table 5.2-1.
 True vapor pressure (P) from mass fraction analysis (see vapor mass fraction - diesel spreadsheets for calculations).
 Molecular weight (M) calculated from mass fraction analysis.
 Source of temperature data: http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/111577_tsum.html
 Hourly temperature of bulk liquid loaded (°R) (T) = Maximum Monthly Maximum (°F) + 460
 Annual temperature of bulk liquid loaded (°R) (T) = Mean Maximum Monthly Temperature (°F) + 460

Transloading Assumptions (Diesel)			Note: Will include diesel volume from biodiesel if biodiesel product is present.		
ULSD/LSD Diesel Loading Loss	5,000	Barrels/Day			
	42	Gallons/Barrel			
	210,000	Gallons/Day	1,480,081	lb/day	((gal/day) * product density (7.05 lb/gal))
	1,825,000	Barrels/Year	540,229,563	lb/year	((gal/year) * product density (7.05 lb/gal))
	76,650,000	Gallons/year			
Operating Efficiency	90.3%				

Maximum Hourly Emissions (Diesel)			
Loading Assumptions	Parameter	Rate	Units
	Pumping Rate	800	gal/min
	Rail Car Capacity	30,000	Gallons
	Tank Truck Capacity	8,000	Gallons
	Max. 2 Transloader Rate (4 Trucks/hr)	32,000	Gal/hour
			(Max. 2 Transloader Rate (4 Trucks/hr) * product density (7.05 lb/gal))

UNCONTROLLED Maximum Hourly VOC Emissions (ULSD/LSD Diesel Loading Loss)							
Constant	S	P	M	T	Loading Loss (L _L) (lb/1000 gal)	Gallons Throughput (Gal/hr) (thousands)	Hourly Emissions (lb/hr)
12.46	1	0.03	107.8	544.7	0.0787	32	2.52

CONTROLLED Maximum Hourly VOC Emissions (ULSD/LSD Diesel Loading Loss)							
UNCONTROLLED Loading Loss (L _L)	Operating Efficiency (%)	Potential Efficiency (%)	Remaining Emissions (%)	T	Controlled Loading Loss (L _L) (lb/1000 gal)	Gallons Throughput (Gal/hr) (thousands)	Hourly Emissions (lb/hr)
0.0787	90.3%	100%	9.8%	544.7	0.0077	32	0.25

UNCONTROLLED Annual VOC Emissions (ULSD/LSD Diesel Loading Loss)								
Constant	S	P	M	T	Loading Loss (L _L) (lb/1000 gal)	Gallons Throughput (Gal/yr) (thousands)	Annual Emissions (lb/year)	Annual Emissions (tons/year)
12.46	1	0.015	105.0	519.53	0.0367	76,650	2,811	1.41

CONTROLLED Annual VOC Emissions (ULSD/LSD Diesel Loading Loss)								
UNCONTROLLED Loading Loss (L _L)	Operating Efficiency (%)	Potential Efficiency (%)	Remaining Emissions (%)	T	Controlled Loading Loss (L _L) (lb/1000 gal)	Gallons Throughput (Gal/hr) (thousands)	Annual Emissions (lb/year)	Annual Emissions (tons/year)
0.0367	90.25%	100%	9.75%	519.53	0.0036	76,650	274	0.14

Methodology

Gallons Throughput (hr/yr) (thousands) = (gal/hr) / 1000
 Hourly Emissions (lb/hr) = Loading Loss (L_L) (lb/1000 gal) * Gallons Throughput (Gal/hr) (thousands)
 Controlled Loading Loss (L_L) (lb/1000 gal) = UNCONTROLLED Loading Loss (L_L) * Remaining Emissions (%)
 Gallons Throughput (Gal/yr) (thousands) = (gal/yr) / 1000
 Annual Emissions (lb/year) = Loading Loss (L_L) (lb/1000 gal) * Gallons Throughput (Gal/yr) (thousands)
 Annual Emissions (tons/year) = Annual Emissions (lb/year) / (2000 lb/ton)

HAPs

Constituent	Vapor Mass Fraction		UNCONTROLLED Hourly Emissions (lb/hr)	CONTROLLED Hourly Emissions (lb/hr)	UNCONTROLLED Annual Emissions (tons/year)	CONTROLLED Annual Emissions (tons/year)
	Sheet 4b, col. T Hourly	Sheet 4a, col. T Annual				
benzene	1.56E-01	1.81E-01	3.93E-01	3.83E-02	2.54E-01	2.48E-02
o-xylene	1.70E-02	1.64E-02	4.29E-02	4.18E-03	2.30E-02	2.24E-03
biphenyl	1.34E-04	8.74E-05	3.37E-04	3.29E-05	1.23E-04	1.20E-05
ethylbenzene	3.85E-02	3.81E-02	9.70E-02	9.46E-03	5.35E-02	5.22E-03
toluene	2.95E-01	3.15E-01	7.43E-01	7.24E-02	4.43E-01	4.32E-02
m+p-xylenes (as p-xylene)	1.16E-01	1.14E-01	2.91E-01	2.84E-02	1.60E-01	1.56E-02
naphthalene	4.61E-03	3.68E-03	1.16E-02	1.13E-03	5.17E-03	5.04E-04
Total VOC			2.52	0.25	1.41	0.14
Total HAP			1.58	0.15	0.94	0.09

Methodology

UNCONTROLLED Hourly Emissions (lb/hr) = Hourly Vapor Mass Fraction * UNCONTROLLED Total VOC (lb/hr)
 CONTROLLED Hourly Emissions (lb/hr) = UNCONTROLLED Hourly Emissions (lb/hr) * (1 - Operating Efficiency)
 UNCONTROLLED Annual Emissions (tons/year) = Annual Vapor Mass Fraction * UNCONTROLLED Total VOC (tons/year)
 CONTROLLED Annual Emissions (tons/year) = UNCONTROLLED Annual Emissions (tons/year) * (1 - Operating Efficiency)

DENATURED ETHANOL WITH 2.5% GASOLINE
Ethanol Loading Losses

Company Name: Musket Corporation
Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
Registration No.: 089-28552-05335
Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
Date: October 26, 2009

$L_L = 12.46$ (SPM/T) L_L = Loading loss, lb/1000 gallons of product loaded S = Saturation factor P = True vapor pressure of liquid (psia) M = molecular weight of vapors (lb/lb-mole) T = Temperature of bulk liquids stored (°R)	Comment	DENATURED ETHANOL WITH 2.5% GASOLINE	
	CONTROLLED	Hourly	Annual
	Bottom Loading, Dedicated	0.17	0.08
		1	1
		1.57	0.71
	49.0	49.9	
	544.7	519.5	

Calculated
AP-42 - Table 5.2-1. SATURATION (S) FACTORS
True Vapor pressure from Mass Fraction Analysis. Calculation at given temperature from tab 5.
Molecular weight calculated from Mass Fraction Analysis.
Temperature data from the following websites:
http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/111577_tsum.html &
http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/111577_tsum.html

Transloading Assumptions (DENATURED ETHANOL WITH 2.5% GASOLINE)			
DENATURED ETHANOL WITH 2.5% GASOLINE	3,000	Barrels/Day	
DENATURED ETHANOL WITH 2.5% GASOLINE	42	Gallons/Barrel	6.59 lb/gal
DENATURED ETHANOL WITH 2.5% GASOLINE	126,000	Gallons/Day	830.164 lb/day
DENATURED ETHANOL WITH 2.5% GASOLINE	1,095,000	Barrels/Year	
DENATURED ETHANOL WITH 2.5% GASOLINE	45,990,000	Gallons/year	303,009.714 lb/year
Operating Efficiency	90.3%	NA	

UUCONTROLLED Annual VOC Emissions (DENATURED ETHANOL WITH 2.5% GASOLINE)								
Constant	Saturation Factor	True Vapor Pressure (psia)	Molecular Weight (lb/lb-mole)	Temperature (°R)	L_L = Loading Loss (lb/1000 gal)	Gallons Throughput (Gal/yr) (thousands)	Annual Emissions (lb/year)	Annual Emissions (TPY)
12.46	1	0.71	49.9	519.5	0.85	45,990	39,025	19.51

CONTROLLED Annual VOC Emissions (DENATURED ETHANOL WITH 2.5% GASOLINE)								
UUCONTROLLED LL = Loading Loss lb/1000 gal	Operating Efficiency %	Potential Efficiency %	Remaining Emissions %	Temperature (°R)	CONTROLLED LL = Loading Loss lb/1000 gal	Gallons Throughput (Gal/year) (thousands)	Annual Emissions (lb/year)	Annual Emissions (TPY)
0.85	90.3%	100%	9.8%	519.5	0.0827	45,990	3,805	1.90

Maximum Hourly Emissions (DENATURED ETHANOL WITH 2.5% GASOLINE)			
Loading Assumptions:	Parameter	Rate	Units
	Pumping Rate	400	GPM
	Rail Car	30,000	Gallons
	Tank Truck	8,000	Gallons
	Max. Single Transloader Rate (2 Trucks/hr)	16,000	Gal/hour
			105,418 lb/hr

UUCONTROLLED Maximum Hourly VOC Emissions (DENATURED ETHANOL WITH 2.5% GASOLINE)							
Constant	Saturation Factor	True Vapor Pressure (psia)	Molecular Weight (lb/lb-mole)	Temperature (°R)	L_L = Loading Loss (lb/1000 gal)	Gallons Throughput (Gal/hr) (thousands)	Maximum Emissions (lb/hr)
12.46	1	1.57	49.0	544.7	1.75	16	28.07

CONTROLLED Maximum Hourly VOC Emissions (DENATURED ETHANOL WITH 2.5% GASOLINE)							
UUCONTROLLED LL = Loading Loss lb/1000 gal	Operating Efficiency %	Potential Efficiency %	Remaining Emissions %	Temperature (°R)	CONTROLLED LL = Loading Loss lb/1000 gal	Gallons Throughput (Gal/hour) (thousands)	Max-hour Emissions (lb/hour)
1.75	90.3%	100%	9.8%	544.7	0.1711	16	2.74

Constituent	Vapor Mass Fraction		UUCONTROLLED Max.Hourly (lb/hr)	CONTROLLED Max.Hourly (lb/hr)	UUCONTROLLED Annual (TPY)	CONTROLLED Annual (TPY)	Comment
	Sheet 5b col. U Hourly	Sheet 5a col. U Annual					
DENATURED ETHANOL WITH 2.5% GASOLINE							
Total VOC			28.07	2.74	19.51	1.9	These values are calculated above
Total HAP			0.111	0.011	0.086	0.01	These values are based upon the vapor mass fraction of HAPs in the total VOCs
1,3-Butadiene	2.67E-05	3.75E-05	0.00075	0.000	0.001	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
naphthalene	2.87E-07	2.22E-07	0.00001	0.000	0.000	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
methyl tert-butyl ether	2.97E-04	3.61E-04	0.008	0.001	0.007	0.001	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
ethylbenzene	6.22E-05	5.98E-05	0.002	0.000	0.001	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
benzene	6.60E-04	7.44E-04	0.019	0.002	0.015	0.001	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
p-xylene	6.45E-05	6.19E-05	0.002	0.000	0.001	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
2,2,4-trimethylpentane	4.40E-04	4.83E-04	0.012	0.001	0.009	0.001	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
n-hexane	1.33E-03	1.56E-03	0.037	0.004	0.030	0.003	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
p-xylene	6.40E-05	5.98E-05	0.002	0.000	0.001	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
m-xylene	1.49E-04	1.42E-04	0.004	0.000	0.003	0.000	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.
toluene	8.58E-04	8.92E-04	0.024	0.002	0.017	0.002	This value is based upon the vapor mass fraction in DENATURED ETHANOL WITH 2.5% GASOLINE.

Emission Factors are from AP-42, Volume 1, Fifth Edition, January 1995, Section 5.2, Transportation and Marketing of Petroleum Liquids.

**Bio Diesel with 0.1% Diesel
Loading Losses Emission Factor Equation**

Company Name: Musket Corporation
 Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
 Registration No.: 089-28552-05335
 Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
 Date: October 26, 2009

$L_L = 12.46$ (SPM/T)		Comment CONTROLLED Bottom Loading, Dedicated	ULSD/LSD Diesel	
L_L = Loading loss, lb/1000 gallons of product loaded S = Saturation factor P = True vapor pressure of liquid (psia) M = molecular weight of vapors (lb-lb-mole) T = Temperature of bulk liquids stored (°R)			Hourly	Annual
			0.03	0.03
			1	1
			0.0091	0.0091
		130	130	
		544.7	519.5	

Calculated
 AP-42 - Table 5.2-1. SATURATION (S) FACTORS
 True Vapor pressure from Manufacturer. Calculation at given temperature from Data Input Tab.
Molecular weight from Manufacturer.
 Temperature data from the following websites:
http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/il/111577_tsum.html &
http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/il/111577_tsum.html

Transloading Assumptions (Bio Diesel with 0.1% Diesel)			
Bio Diesel with 0.1% Diesel	500	Barrels/Day	
Bio Diesel with 0.1% Diesel	42	Gallons/Barrel	7.34 lb/gal
Bio Diesel with 0.1% Diesel	21,000	Gallons/Day	154,123 lb/day
Bio Diesel with 0.1% Diesel	182,318	Barrels/Year	
Bio Diesel with 0.1% Diesel	7,665,000	Gallons/year	56,254,968 lb/year
Operating Efficiency	0.0%	NA	

UUNCONTROLLED Annual VOC Emissions (Bio Diesel with 0.1% Diesel)								
Constant	Saturation Factor	True Vapor Pressure (psia)	Molecular Weight (lb-lb-mole)	Temperature (°R)	L_L = Loading Loss (lb/1000 gal)	Gallons Throughput (Gal/yr) (thousands)	Annual Emissions (lb/year)	Annual Emissions (TPY)
12.46	1	0.0091	130.0	519.5	0.03	7,665	217	0.11

CONTROLLED Annual VOC Emissions (Bio Diesel with 0.1% Diesel)								
UUNCONTROLLED LL = Loading Loss lb/1000 gal	Operating Efficiency %	Potential Efficiency %	Remaining Emissions %	Temperature (°R)	CONTROLLED LL = Loading Loss lb/1000 gal	Gallons Throughput (Gal/year) (thousands)	Annual Emissions (lb/year)	Annual Emissions (TPY)
0.0284	0.0%	100%	100.0%	519.5	0.028	7,665	217	0.11

Maximum Hourly Emissions (Bio Diesel with 0.1% Diesel)			
Loading Assumptions:	Parameter	Rate	Units
	Pumping Rate	400	GPM
	Rail Car	30,000	Gallons
	Tank Truck	8,000	Gallons
	Max. Single Transloader Rate (2 Trucks/hr)	16,000	Gal/hour
			117,427 lb/hr

UUNCONTROLLED Maximum Hourly VOC Emissions (Bio Diesel with 0.1% Diesel)							
Constant	Saturation Factor	True Vapor Pressure (psia)	Molecular Weight (lb-lb-mole)	Temperature (°R)	L_L = Loading Loss (lb/1000 gal)	Gallons Throughput (Gal/hr) (thousands)	Maximum Emissions (lb/hr)
12.46	1	0.0091	130.0	544.7	0.03	16	0.43

CONTROLLED Maximum Hourly VOC Emissions (Bio Diesel with 0.1% Diesel)							
UUNCONTROLLED LL = Loading Loss lb/1000 gal	Operating Efficiency %	Potential Efficiency %	Remaining Emissions %	Temperature (°R)	CONTROLLED LL = Loading Loss lb/1000 gal	Gallons Throughput (Gal/hour) (thousands)	Max-hour Emissions (lb/hour)
0.027	0.0%	100%	100.0%	544.7	0.027	16	0.43

Emission Factors are from AP-42, Volume 1, Fifth Edition, January 1995, Section 5.2, Transportation and Marketing of Petroleum Liquids

No HAPs generated from BioDiesel

Company Name: Musket Corporation
Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
Registration No.: 089-28552-05335
Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
Date: October 26, 2009

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

Type of Vehicle	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 (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Tanker Truck: entering plant (one-way trip)	2.0	24.0	48.0	40.0	1920.0	0.25	12.0	4380.0
Tanker Truck: leaving plant (one-way trip)	2.0	24.0	48.0	12.5	600.0	0.25	12.0	4380.0
Total			96.0		2520.0		24.0	8760.0

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

Unmitigated Emission Factor, $E_f = k * [(s/12)^a] * [(W/3)^b]$ (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 Road)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	26.3	26.3	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, $E_{ext} = E * [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E * [(365 - P)/365]$
 where P = days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	6.85	1.75	lb/mile
Mitigated Emission Factor, $E_{ext} =$	4.50	1.15	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Type of Vehicle	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)
Tanker Truck: entering plant (one-way trip)	15.00	3.82	9.86	2.51	4.93	1.26
Tanker Truck: leaving plant (one-way trip)	15.00	3.82	9.86	2.51	4.93	1.26
	29.99	7.64	19.72	5.03	9.86	2.51

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) PTE = Potential to Emit

Company Name: Musket Corporation

Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323

Registration No.: 089-28552-05335

Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown

Date: October 26, 2009

VARIABLES FOR CALCULATING VAPOR PRESSURE

Constituent	CAS NUMBER	MOLECULAR WEIGHT	VARIABLE				TEMPERATURE RANGE	
			A	B	C	D	(K)	(K)
2,2,4-trimethylpentane (isooctane)	540-84-1	114.22	-1.09E+01	-7.04E+03	8.67E+01	8.87E-06	165.78	543.96
benzene	71-43-2	78.11	-8.43E+00	-6.28E+03	7.11E+01	6.20E-06	278.68	562.16
biphenyl	92-52-4	154.21	-1.12E+01	-1.08E+04	9.40E+01	3.86E-06	342	789.26
ethylbenzene	100-41-4	106.16	-9.55E+00	-7.64E+03	7.98E+01	5.65E-06	178.15	617.17
m-xylene (1,3-dimethylbenzene)	108-38-3	106.17	-9.11E+00	-7.56E+03	7.69E+01	5.40E-06	225.3	617.05
naphthalene	91-20-3	128.17	-7.67E+00	-8.56E+03	6.89E+01	2.86E-06	353.43	748.35
o-xylene (1,2-dimethylbenzene)	95-47-6	106.17	-1.01E+01	-7.95E+03	8.33E+01	5.94E-06	247.98	630.37
p-xylene (1,4-dimethylbenzene)	106-42-3	106.16	-9.53E+00	-7.64E+03	7.96E+01	5.75E-06	286.41	616.26
methyl tert-butyl ether	1634-04-4	88.15	-7.61E+00	-5.56E+03	6.49E+01	6.59E-06	164.55	497.1
toluene	108-88-3	92.14	-8.80E+00	-6.92E+03	7.41E+01	5.75E-06	178.18	591.79

Notes:

1. CAS Number, Molecular Weights and pure vapor pressure coefficients (A,B,C,D) are from a chemical database found at www.chemic.org/kdb.
2. Vapor pressure calculation: $\ln(P_{vp}) = A \ln(T) + B/T + C + D \cdot T^2$ where P_{vp} is vapor pressure in kPa and T is temperature in Kelvin
3. Temperature data from regional climate center

Appendix A: Emissions Calculations

Company Name: Musket Corporation
 Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
 Registration No.: 089-28552-05335
 Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
 Date: October 26, 2009

VAPOR MASS FRACTION - DIESEL - ANNUAL TEMPERATURE

COMPONENT	CAS NUMBER	HAP?	MASS FRACTION C _i X _i (wt %)	MASS FRACTION C _i X _i (-)	A	B	C	D	MASS FRACTION C _i X _i (-)	MOLECULAR WEIGHT MW (lb/lb-mole)	Temperature	PURE VAPOR PRESSURE P (mm Hg)	MASS IN 100 LBS Ma (lbs)	MOLES Mol (lb-mole)	MOLE FRACTION IN LIQUID x _i (-)	PARTIAL PRESSURE P _i (mm Hg)	MOLE FRACTION IN VAPOR y _i (-)	VAPOR MASS Vma (lb/lb-mole)	VAPOR MOLECULAR WEIGHT (lb/lb-mole)	MASS FRACTION IN VAPOR Y _i (-)	
											59.5 (°F)										
use in analysis												From HSDB	From HSDB, CHERIC.ORG	=100*X _i	=Ma / MW	=Mol/SMol	=x _i *P	=P _i / SP _i	=MW*y _i	=Y _i *MW	=Vma / SVma
benzene	71-43-2	Yes	2.90E-02	2.90E-04	-8.43E+00	-6.28E+03	7.11E+01	6.20E-06	2.90E-04	7.81E+01	5.98E+01	2.90E-02	3.71E-04	2.93E-03	1.75E-01	2.33E-01	1.82E+01	1.41E+01	1.81E-01		
o-xylene	95-47-6	Yes	4.30E-02	4.30E-04	-1.01E+01	-7.95E+03	8.33E+01	5.94E-06	4.30E-04	1.06E+02	3.65E+00	4.30E-02	4.05E-04	3.20E-03	1.17E-02	1.55E-02	1.65E+00	1.74E+00	1.64E-02		
biphenyl	92-52-4	Yes	6.30E-02	6.30E-04	-1.12E+01	-1.08E+04	9.40E+01	3.86E-06	6.30E-04	1.54E+02	1.33E-02	6.30E-02	4.09E-04	3.23E-03	4.29E-05	5.70E-05	8.78E-03	1.35E-02	8.74E-05		
ethylbenzene	100-41-4	Yes	6.80E-02	6.80E-04	-9.55E+00	-7.64E+03	7.98E+01	5.65E-06	6.80E-04	1.06E+02	5.37E+00	6.80E-02	6.41E-04	5.06E-03	2.71E-02	3.60E-02	3.83E+00	4.04E+00	3.81E-02		
toluene	108-88-3	Yes	1.80E-01	1.80E-03	-8.80E+00	-6.32E+03	7.41E+01	5.75E-06	1.80E-03	9.21E+01	1.68E+01	1.80E-01	1.95E-03	1.54E-02	2.59E-01	3.44E-01	3.17E+01	2.91E+01	3.15E-01		
m+p-xylenes (as p-xylene)	106-42-3	Yes	2.20E-01	2.20E-03	-9.53E+00	-7.64E+03	7.96E+01	5.75E-06	2.20E-03	1.06E+02	4.97E+00	2.20E-01	2.07E-03	1.64E-02	6.13E-02	1.08E-01	1.15E+01	1.21E+01	1.14E-01		
naphthalene	91-20-3	Yes	2.60E-01	2.60E-03	-7.67E+00	-8.56E+03	6.89E+01	2.86E-06	2.60E-03	1.28E+02	1.36E-01	2.60E-01	2.03E-03	1.60E-02	2.17E-03	2.89E-03	3.70E-01	4.72E-01	3.68E-03		
TOTAL												2.4E+01	1.3E-01	1.0E+00	7.5E-01	1.0E+00	1.0E+02	1.0E+02	1.0E+00		

- Notes:
- Other Diesel VOC assumes average molecular weight of all other constituents, and Pure Vapor Pressure of Distillate fuel oil No.2 Oil @ 59.5°F (AP-42 Table 7.1-2).
 - Wt % for diesel (No. 2) fuel oil constituents are from: Table 10, Thomas L. Potter, "Composition of Petroleum Mixtures", University of Massachusetts, Amherst, Massachusetts, May, 1998.
 - CAS Number, Molecular Weights and pure vapor pressure coefficients (A,B,C,D) are from a chemical database found at www.chemic.org/kdb.
 - Temperature data from the following website: source of temperature data:
 - Vapor pressure calculation: $\ln(Pvp) = A \ln(T) + B/T + C + D/T^2$ where Pvp is vapor pressure in kPa and T is temperature in Kelvin

Vapor Pressure Conversion	
Factor	760 mm Hg
Factor	14.7 psia
Vapor Pressure	0.01 psia

Appendix A: Emissions Calculation:

Company Name: Musket Corporation
 Address: Indiana Harbor Belt Railroad at 2721-161st St, Hammond, IN 46323
 Registration No.: 089-28552-05335
 Reviewer: Calculations submitted by Musket Corporation & reviewed by Summer Keown
 Date: October 26, 2009

VAPOR MASS FRACTION - DIESEL - HOURLY TEMPERATURE

COMPONENT	CAS NUMBER	HAP?	MASS FRACTION C _i (wt %)	MASS FRACTION C _i X _i (-)	Temperature 84.7 (°F)				MASS FRACTION C _i X _i (-)	MOLECULAR WEIGHT MW (lb/lb-mole)	PURE VAPOR PRESSURE P (mm Hg)	MASS IN 100 LBS Ma (lbs)	MOLES Mol (lb-mole)	MOLE FRACTION IN LIQUID x _i (-)	PARTIAL PRESSURE P _i (mm Hg)	MOLE FRACTION IN VAPOR y _i (-)	VAPOR MASS Vma (lb/lb-mole)	VAPOR MOLECULAR WEIGHT (lb/lb-mole)	MASS FRACTION IN VAPOR Y _i (-)
					use in analysis	From HSDB	From HSDB, CHERIC.ORG	=100*X _i											
benzene	71-43-2	Yes	2.90E-02	2.90E-04	-8.43E+00	-6.28E+03	7.11E+01	6.20E-06	2.90E-04	7.81E+01	1.15E+02	2.90E-02	3.71E-04	2.93E-03	3.38E-01	2.05E-01	1.60E+01	1.22E+01	1.56E-01
o-xylene	95-47-6	Yes	4.30E-02	4.30E-04	-1.01E+01	-7.95E+03	8.33E+01	5.94E-06	4.30E-04	1.06E+02	8.51E+00	4.30E-02	4.06E-04	3.20E-03	2.72E-02	1.65E-02	1.75E+00	1.81E+00	1.70E-02
biphenyl	92-52-4	Yes	6.30E-02	6.30E-04	-1.12E+01	-1.08E+04	9.40E+01	3.86E-06	6.30E-04	1.54E+02	4.57E-02	6.30E-02	4.08E-04	3.23E-03	1.47E-04	8.93E-05	1.38E-02	2.07E-02	1.34E-04
ethylbenzene	100-41-4	Yes	6.80E-02	6.80E-04	-9.55E+00	-7.64E+03	7.98E+01	5.65E-06	6.80E-04	1.06E+02	1.22E+01	6.80E-02	6.41E-04	5.06E-03	6.16E-02	3.73E-02	3.96E+00	4.09E+00	3.85E-02
toluene	108-88-3	Yes	1.80E-01	1.80E-03	-8.80E+00	-6.92E+03	7.41E+01	5.75E-06	1.80E-03	9.21E+01	3.52E+01	1.80E-01	1.96E-03	1.54E-02	5.43E-01	3.29E-01	3.03E+01	2.72E+01	2.95E-01
m+p-xylenes (as p-xylene)	106-42-3	Yes	2.20E-01	2.20E-03	-9.53E+00	-7.64E+03	7.96E+01	5.75E-06	2.20E-03	1.06E+02	1.13E+01	2.20E-01	2.07E-03	1.64E-02	1.85E-01	1.12E-01	1.19E+01	1.23E+01	1.16E-01
naphthalene	91-20-3	Yes	2.60E-01	2.60E-03	-7.67E+00	-8.56E+03	6.89E+01	2.86E-06	2.60E-03	1.28E+02	3.81E-01	2.60E-01	2.03E-03	1.60E-02	6.10E-03	3.70E-03	4.74E-01	5.91E-01	4.61E-03
TOTAL											2.4E+01	1.3E-01	1.0E+00	1.6E+00	1.0E+00	1.0E+02	1.1E+02	1.0E+00	

Notes:

- Other Diesel VOC assumes average molecular weight of all other constituents, and Pure Vapor Pressure of Distillate fuel oil No.2 Oil @ 84.7°F (AP-42 Table 7.1-2).
- Wt % for diesel (No. 2) fuel oil constituents are from: Table 10, Thomas L. Potter, "Composition of Petroleum Mixtures", University of Massachusetts, Amherst, Massachusetts, May, 1998.
- CAS Number, Molecular Weights and pure vapor pressure coefficients (A,B,C,D) are from a chemical database found at www.chemic.org/kdb.
- Temperature data from the following website: http://mrcc.isws.illinois.edu/climate_midwest/historical/temp/il/11577_tsum.html
- Vapor pressure calculation: $\ln(Pvp) = A \ln(T) + B/T + C + D \cdot T^2$ where Pvp is vapor pressure in kPa and T is temperature in Kelvin

Vapor Pressure Conversion	
Factor	760 mm Hg
Factor	14.7 psia
Vapor Pressure	0.03 psia



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

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

TO: Nicholas Bock
Musket Corporation
POB 26210
Oklahoma City, OK 73120

DATE: November 12, 2009

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

SUBJECT: Final Decision
Registration
089-28552-05335

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:
Michael Key (Musket Corporation)
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.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

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3		Mark Coleman 9 Locust Place Ogden Dunes IN 46368 (Affected Party)										
4		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)										
5		Craig Hogarth 7901 West Morris Street Indianapolis IN 46231 (Affected Party)										
6		Lake County Commissioners 2293 N. Main St, Building A 3rd Floor Crown Point IN 46307 (Local Official)										
7		Anthony Copeland 2006 E. 140th Street East Chicago IN 46312 (Affected Party)										
8		Barbara G. Perez 506 Lilac Street East Chicago IN 46312 (Affected Party)										
9		Mr. Robert Garcia 3733 Parrish Avenue East Chicago IN 46312 (Affected Party)										
10		Ms. Karen Kroczek 8212 Madison Ave Munster IN 46321-1627 (Affected Party)										
11		Calumet Township Trustee 35 E 5th Avenue Gary IN 46402 (Affected Party)										
12		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party)										
13		Gary City Council 401 Broadway # 209 Gary IN 46402 (Local Official)										
14		Nicholas Bock Musket Corporation PO Box 26210 Oklahoma City OK 73120 (Source CAATS)										
15		Michael Key Musket Corporation PO Box 26210 Oklahoma City OK 73120 (RO CAATS)										

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											Remarks
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2		Lake County Health Department-Gary 1145 W. 5th Ave Gary IN 46402-1795 (Health Department)									
3		WJOB / WZVN Radio 6405 Olcott Ave Hammond IN 46320 (Affected Party)									
4		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)									
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