



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

Mr. Mark Abraham
Calumite Company, LLC
1575 Adler Circle, Ste. B
Portage, IN 46368

June 7, 2011

Re: Temporary Operation (TO)
TO No. 127-30570-00024

Dear Mr. Abraham:

On May 20, 2011, Calumite Company, LLC, Portage, Indiana, submitted a letter informing the Office of Air Quality (OAQ) of the intention to perform the following operation: loading furnace refractory brick into rail cars which is not currently done at the source.

A copy of the emission calculation, provided by the source, has been attached with this letter as an 'Attachment A'. The emission factors used for the bucket loader drop emissions are derived from AP 42, Table 11.19.2-2. The source of the emission factors used for unpaved roads and storage piles emissions are specified in the calculations.

Temporary Operation General Information

Operation:	Refractory brick loading
Location of the Operation:	915 Sun Drive, Portage, Indiana 46368
County:	Porter
County Status:	Nonattainment for PM2.5 standard Attainment for all other criteria pollutants
Purpose of the Operation:	Evaluate refractory brick loading into rail cars for shipment to customers
Starting Date of the Operation:	Seven days from the notification date [326 IAC 2-1.1-3(h)(3)(F)]
Duration of the Operation:	30 days of actual operation

Applicable Requirements

Pursuant to 326 IAC 2-1.1-3(h)(3), the above mentioned temporary operation shall satisfy the following requirements:

1. The potential emissions from the operation should be less than 25 tons per year for the duration of the operation. [326 IAC 2-1.1-3(h)(3)(A)]
2. The operation should not be a major source or modification as defined under 326 IAC 2-2, 326 IAC 2-3 or 326 IAC 2-7. [326 IAC 2-1.1-3(h)(3)(B)]
3. The purpose of the operation is to temporarily conduct an operation not considered as part of the normal operation or production of the source. [326 IAC 2-1.1-3(h)(3)(C)(ii)]
4. The duration of the temporary operation should not exceed 30 days of actual operation. [326 IAC 2-1.1-3(h)(3)(D)]
5. The source shall submit a report containing the following information, seven (7) days after the conclusion of the temporary operation: [326 IAC 2-1.1-3(h)(3)(G)]

Portage, Indiana
Permit Writer: Mehul Sura

TO No. 127-30570-00024

- (a) The actual dates of the construction and operation.
 - (b) The duration of the operation.
 - (c) The actual emissions occurring during the operation.
6. The report shall be submitted to:
Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Temporary Operation (TO) Expiration Date

This approval expires after 30 days of actual operating time of the operation.

If you have any questions regarding this approval, please contact Mehul Sura of my staff at 317-233-6868 or at 1-800-451-6027, ext 3-6868.

Sincerely,



Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

mns

Enclosure: Temporary Operation Report (1 page)
Attachment A - Emission Calculation

cc: File - Porter County
Porter County Health Department
Compliance and Enforcement Branch
North West Regional Office (NWRO)

Susan Grenzebach
OCS Environmental, Inc.
130 Lincoln Street, Suite 1
Porter, IN 46034

Portage, Indiana
 Permit Writer: Mehul Sura

TO No. 127-30570-00024

**Indiana Department of Environmental Management
 Office of Air Quality
 Permit Administration and Support Section**

Temporary Operation Report

Source Name:
 Source Location:
 County:
 TO No.:
 Approval Reviewer:

Milestone Schedule	
Type of unit/operation:	
Actual starting date of the construction:	
Actual ending date of the construction:	
Actual starting date of the operation:	
Actual ending date of the operation:	
Actual number of days of the operation:	
Calculated emissions during the duration of the operation:	
Additional Comments:	

<p>I certify under penalty of law that this report was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.</p>
Signature:
Printed Name:
Title/Position:
Date:

cc: Compliance and Enforcement Branch

Attachment A to the cover letter of
Temporary Operation (TO) No. 127-30570-00024

Trial Operation - Refractory Brick Loading into Rail Cars
 Calumite Company, LLC
 Potential to Emit (PTE) Summary

Total Trial Throughput: 200 Tons

Unit	PM Emission Factor (lb/ton)	PM Emissions (tpy)	PM-10 Emission Factor (lb/ton)	PM-10 Emissions (tpy)	PM-2.5 Emission Factor (lb/ton)	PM-2.5 Emissions (tpy)
Bucket loader drops	0.003	0.000	0.0011	0.0001	0.0011	0.0001
Roadway Emissions	---	0.06704	---	0.02357	---	0.00003
Pile Emissions	0.02530	0.00253	0.01197	0.00120	0.00376	0.00038
Wind Erosion	---	0.00466	---	0.00233	---	0.00035
Total PM	0.075	0.075	Total PM-10	0.027	Total PM2.5	0.001

Trial Operation - Refractory Brick Loading into Rail Cars
EMISSIONS FROM UNPAVED ROADWAYS
CALUMITE COMPANY, LLC.
AP-42 12.2.2 (12/03) UNPAVED ROADWAYS

Throughput: 200 tons

Vehicle	Estimated Maximum Throughput (tons/yr)	Tare Weight (tons)	Gross Weight (tons)	Product Weight (tons per round trip)	Round Trips/yr	Miles per round trip	VM/yr
Brick Hauling Trucks	200	30	35	5	40	0.18	7
972G Loader							

-brick is received by truck via public roadways-the unpaved portion is on Calumite property

Unpaved Roadways Continued

Vehicle	Mean Weight (W) (tons)	UNCONTROLLED			CONTROLLED*				
		PM2.5 Emission Factor ² (lb/VMT)	PM Emission Factor ² (lb/VMT)	PM10 Emission Factor ² (lb/VMT)	PM Emissions (TPY)	PM2.5 Emissions (TPY)	PM10 Emissions (TPY)	PM2.5 Emissions (TPY)	
Brick Hauling Trucks	26	0.71	13.14	4.62	0.014	0.000005	0.0142825	0.0050223	0.0000051
972G Loader	33	0.79	14.66	5.15	0.053	0.0186	0.0527591	0.0185523	0.0000208
					0.067	0.0236	0.0670416	0.0235747	0.0000259

2. Reference AP-42, 13.2.2, Version 12/03
 $E = k((s/12)^a)((W/3)^b)$ ((365-p)/365)

Variable	PM10 Value	Units	Description
k	1.5	lb/VMT - Table 13.2.2-2	empirical constant
a	0.9	Table 13.2.2-2	empirical constant
b	0.45	Table 13.2.2-2	empirical constant
W	see above	tons	mean vehicle weight
s	24	% (Table 13.2.2-1)(iron/steel mills)	surface material silt content x4
p	135	Figure 13.2.2-1	mean number of days in a year with at least 0.01 inches of precip

Variable	PM Value	Units	Description
k	4.9	Table 13.2.2-2	empirical constant
a	0.7	Table 13.2.2-2	empirical constant
b	0.45	Table 13.2.2-2	empirical constant
W	see above	tons	mean vehicle weight
s	24	% (Table 13.2.2-1)(iron/steel mills)	surface material silt content x4
p	135	Figure 13.2.2-1	mean number of days in a year with at least 0.01 inches of precip

Variable	PM2.5 Value	Units	Description
k	0.23	Table 13.2.2-2	empirical constant
a	0.9	Table 13.2.2-2	empirical constant
b	0.45	Table 13.2.2-2	empirical constant
W	see above	tons	mean vehicle weight
s	24	% (Table 13.2.2-1)(iron/steel mills)	surface material silt content x4
p	135	Figure 13.2.2-1	mean number of days in a year with at least 0.01 inches of precip

Trial Operation - Refractory Brick Loading into Rail Cars
 STORAGE PILES
 CALUMITE COMPANY, LLC.
 AP-42 13.2.4 (195) AGGREGATE HANDLING AND STORAGE PILES

Batch Loading and Unloading Operations from Storage Piles (Aggregate Handling)

$$E = k \cdot (0.0032)^{(U/5)^{1.3}} \cdot (M/2)^{1.4} \text{ lbs/ton}$$

Factor	Value	Source	Description
E _{PM}	0.0252986	Calculated	emission factor
E _{PM10}	0.0119655	Calculated	emission factor
E _{PM2.5}	0.0037606	Calculated	emission factor
k	PM	0.74	13.2.4, Pg.3
k	PM10	0.35	13.2.4, Pg.3
k	PM2.5	0.11	13.2.4, Pg.3
U		13.4	internet
M		0.92	Table 13.2.4-1

E _{PM}	= 0.0252986	lb/ton
E _{PM10}	= 0.0119655	lb/ton
E _{PM2.5}	= 0.0037606	lb/ton

Wind Erosion from Storage Piles (Storage)

$$E_f = 1.7 \cdot (s/1.5)^{(365-p)/235} \cdot (f/15)$$

= 3.47 lb/acre/day

where s = 3 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p(\text{storage}) = E_f \cdot sc \cdot (40 \text{ cu/ft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sq/ft/acre}) / (25 \text{ ft})^3 (365 \text{ day/yr})$$

where sc = 200 tons storage capacity

=	0.00466	tons PM/yr	Uncontrolled
=	0.00233	tons PM-10/yr	Uncontrolled
=	0.00035	tons PM-2.5/yr	Uncontrolled
=	0.00466	tons PM/yr	controlled
=	0.00233	tons PM-10/yr	controlled
=	0.00035	tons PM-2.5/yr	controlled

This equation is from AP-42, Fourth Edition, Section 11.2.3 (583).
 This section of AP-42 has been superseded with a revised version at Section 13.2.4.
 The revised Section 13.2.4 does not offer wind erosion estimation equations.

PM10 = 50% of PM
 PM2.5 = 7.5% of PM

Mail Code 61-53

IDEM Staff	MIDENNEY 6/7/2011 Calumite Company, LLC - contractor of ArcelorMittal(001) 127-30570-00024 (final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	 Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

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1		Mark Abraham Calumite Company, LLC - contractor of ArcelorMitta 1575 Adler Circle, Ste B Portage IN 46368 (Source CAATS)										
2		Mark Abraham GM Calumite Company, LLC - contractor of ArcelorMitta 1575 Adler Circle, Ste B Portage IN 46368 (RO CAATS)										
3		Porter County Board of Commissioners 155 Indiana Ave, Ste 205 Valparaiso IN 46383 (Local Official)										
4		Porter County Health Department 155 Indiana Ave, Suite 104 Valparaiso IN 46383-5502 (Health Department)										
5		Burns Harbor Town Council 1240 N. Boo Rd Burns Harbor IN 46304 (Local Official)										
6		Susan Grenzebach OCS Environmental 130 Lincoln St. Porter IN 46304 (Consultant)										
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