

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Vesuvius USA
Attn: Mr. David E. Haney
333 State Street
Chicago Heights, Illinois 60411

<u>Application No.:</u> 07100085	<u>I.D. No.:</u> 031045AEW
<u>Applicant's Designation:</u>	<u>Date Received:</u> October 26, 2007
<u>Subject:</u> Refractory Product Manufacturing	
<u>Date Issued:</u>	<u>Expiration Date:</u>
<u>Location:</u> 333 State Street, Chicago Heights, Cook County, 60411	

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of:

Bulk Material Unloading (P0001) Controlled by Baghouse;
Refractory Manufacturing Bl #1 (P0002) Controlled by Baghouse;
Bag Dump Station (P0003) Controlled by Baghouse;
Skip Hoist and Granular TR Line (P0004) Controlled by Baghouse;
Refractory Manufacturing Bl #2 (P0005) Controlled by Baghouse;
Bag Dump Station (P0006) controlled by Baghouse;
Bag Breaking Station (P0007) Controlled by Baghouse;
Bulk Bag Loss-in-Weight System (P0009) Controlled by Baghouse;
Bulk Unloading/filling Silos (P0010) Controlled by Baghouse;
Batching Line #3 (P0011) Controlled by Baghouse;
Batching Line #4 (P0012) Controlled by Baghouse;
Wet Mortar (P0013) Controlled by Baghouse
Five (5) Bag Breaking Stations (P0014, P0015, P0016, P0017, and P0018);
Four (4) Castable Mixers and Baggers (P0019, P0020, P0021, and P0023)
Controlled by Four (4) Baghouses;
Two (2) Pre-Cast Mixers (P0028 and P0029) Controlled by Baghouse;
Taphole Mix Line (P0030) Controlled by Baghouse;
Taphole Bulk Bag Batch Line (P0031) Controlled by Baghouse;
One (1) 1.6 mmBtu/hour Natural Gas-Fired Rotary Dryer and Conveyor (P0032)
Controlled by Baghouse;
Eirich Mixer (P0033) Controlled by a Baghouse (Line #11);
One (1) 1.5 mmBtu/hour Natural Gas-Fired Casting Dryer (P0034);
Two (1) 3.2 mmBtu/hour Natural Gas-Fired Casting Dryers (P0035 and P0037);
One (1) 1.6 mmBtu/hour Natural Gas-Fired Casting Dryer (P0036);
One (1) 5.0 mmBtu/hour Natural Gas-Fired Drying Oven #5 (P0038)
One (1) 1.9 mmBtu/hour Natural Gas-Fired Shrink Tunnel Oven;
Two (2) 15,000 Gallon Refined Tar Storage Tanks; and
One (1) 15,000 Gallon Above Ground Slurry Oil Liquid Storage Tank

pursuant to the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued:
 - i. To limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/yr for Particulate Matter less than 10 microns (PM₁₀), Volatile Organic Material (VOM), and 10 tons/year for any single Hazardous Air Pollutant (HAP) and 25 tons/year for any combination of such HAPs). As a result the source is excluded from the requirement to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - ii. To limit the potential emissions of VOM from the source to less than 25 tons/year. As a result, the source is excluded from the requirement of 35 Ill. Adm. Code Part 205, Emission Reduction Market System. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
 - iii. To establish federally enforceable production and operating limitations, which restrict the potential to emit for VOM to less than 25 tons per year so that the source is not subject to the requirements of 35 Ill. Adm. Code Part 218 Subpart TT (Other Emission Units).
 - b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
 - c. This permit supersedes all operating permits issued for this location.
- 2a. Pursuant to 35 Ill. Adm. Code 212.123(a), no person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to 35 Ill. Adm. Code 212.122.
 - b. Pursuant to 35 Ill. Adm. Code 212.123(b), the emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 meter (1000 foot) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period.
 - c. Pursuant to 35 Ill. Adm. Code 212.301, no person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally toward the zenith at a point beyond the property line of the source.

- d. Pursuant to 35 Ill. Adm. Code 212.321(a), no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit which, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in 35 Ill. Adm. Code 212.321(c).
3. Pursuant to 35 Ill. Adm. Code 214.301, no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm.
- 4a. Pursuant to 35 Ill. Adm. Code 218.122(b), no person shall cause or allow the loading of any organic material into any stationary tank having a storage capacity of greater than 946 liters (250 gallons), unless such tank is equipped with a permanent submerged loading pipe, submerged fill, or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201 or unless such tank is a pressure tank as described in Section 218.121(a) or is fitted with a recovery system as described in 35 Ill. Adm. Code 218.121(b)(2).
- b. Pursuant to 35 Ill. Adm. Code 218.301, no person shall cause or allow the discharge of more than 3.6 kg/hour (8 lbs/hour) of organic material into the atmosphere from any emission unit, except as provided in 35 Ill. Adm. Code 218.302, 218.303, or 218.304 and the following exception: If no odor nuisance exists the limitation of 35 Ill. Adm. Code 218 Subpart G shall only apply to photochemically reactive material.
5. This permit is issued based on the source not being subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Refractory Products Manufacturing, 40 CFR 63 Subpart SSSSS. Pursuant to 40 CFR 63.9782, you are subject to 40 CFR 63 Subpart SSSSS if you own or operate a refractory products manufacturing facility that is, is located at, or is part of, a major source of hazardous air pollutant (HAP) emissions according to the criteria in 40 CFR 63.9782(a) and (b). Pursuant to 40 CFR 63.9782(b), a major source of HAP is a plant site that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year.
6. Pursuant to 35 Ill. Adm. Code 212.314, 35 Ill. Adm. Code 212.301 shall not apply and spraying pursuant to 35 Ill. Adm. Code 212.304 through 212.310 and 35 Ill. Adm. Code 212.312 shall not be required when the wind speed is greater than 40.2 km/hour (25 mph). Determination of wind speed for the purposes of this rule shall be by a one-hour average or hourly recorded value at the nearest official station of the U.S. Weather Bureau or by wind speed instruments operated on the site. In cases where the duration of operations subject to this rule is less than one hour, wind speed may be averaged over the duration of the operations on the basis of on-site wind speed instrument measurements.

- 7a. This permit is issued based on the Refined Tar Storage Tanks and the Above Ground Slurry Oil Liquid Storage Tank not being subject to 35 Ill. Adm. Code 218.120 (Control Requirements for Storage Containers of VOL). Pursuant to 35 Ill. Adm. Code 218.119, the limitations of 35 Ill. Adm. Code 218.120 shall apply to all storage containers of volatile organic liquid (VOL) with a maximum true vapor pressure of 0.5 psia or greater in any stationary tank, reservoir, or other container of 151 cubic meters (40,000 gallons) capacity or greater.
- b. Pursuant to 35 Ill. Adm. Code 218.122(c), if no odor nuisance exists the limitations of 35 Ill. Adm. Code 218.122 shall only apply to the loading of VOL with a vapor pressure of 17.24 kPa (2.5 psia) or greater at 294.3°K (70°F).
- c. This permit is issued based on the source not being subject to the control requirements of 35 Ill. Adm. Code Part 218 Subpart TT (Other Emission Units). This is a result of the federally enforceable production and operating limitations established in this permit, which restrict the potential to emit for VOM to less than 25 tons per year.
- 8a. Pursuant to 35 Ill. Adm. Code 212.306, all normal traffic pattern access areas surrounding storage piles specified in 35 Ill. Adm. Code 212.304 and all normal traffic pattern roads and parking facilities which are located on mining or manufacturing property shall be paved or treated with water, oils or chemical dust suppressants. All paved areas shall be cleaned on a regular basis. All areas treated with water, oils or chemical dust suppressants shall have the treatment applied on a regular basis, as needed, in accordance with the operating program required by 35 Ill. Adm. Code 212.309, 212.310 and 212.312.
- b. Pursuant to 35 Ill. Adm. Code 212.307, all unloading and transporting operations of materials collected by pollution control equipment shall be enclosed or shall utilize spraying, pelletizing, screw conveying or other equivalent methods.
- c. Pursuant to 35 Ill. Adm. Code 212.308, crushers, grinding mills, screening operations, bucket elevators, conveyor transfer points, conveyors, bagging operations, storage bins and fine product truck and railcar loading operations shall be sprayed with water or a surfactant solution, utilize choke-feeding or be treated by an equivalent method in accordance with an operating program.
- d. Pursuant to 35 Ill. Adm. Code 212.309(a), the emission units described in 35 Ill. Adm. Code 212.304 through 212.308 and 35 Ill. Adm. Code 212.316 shall be operated under the provisions of an operating program, consistent with the requirements set forth in 35 Ill. Adm. Code 212.310 and 212.312, and prepared by the owner or operator and submitted to the Illinois EPA for its review. Such operating program shall be designed to significantly reduce fugitive particulate matter emissions.
- e. Pursuant to 35 Ill. Adm. Code 212.310, as a minimum the operating program shall include the following:

- i. The name and address of the source;
 - ii. The name and address of the owner or operator responsible for execution of the operating program;
 - iii. A map or diagram of the source showing approximate locations of storage piles, conveyor loading operations, normal traffic pattern access areas surrounding storage piles and all normal traffic patterns within the source;
 - iv. Location of unloading and transporting operations with pollution control equipment;
 - v. A detailed description of the best management practices utilized to achieve compliance with 35 Ill. Adm. Code 212 Subpart K, including an engineering specification of particulate collection equipment, application systems for water, oil, chemicals and dust suppressants utilized and equivalent methods utilized;
 - vi. Estimated frequency of application of dust suppressants by location of materials; and
 - vii. Such other information as may be necessary to facilitate the Illinois EPA's review of the operating program.
- f. Pursuant to 35 Ill. Adm. Code 212.312, the operating program shall be amended from time to time by the owner or operator so that the operating program is current. Such amendments shall be consistent with 35 Ill. Adm. Code 212 Subpart K and shall be submitted to the Illinois EPA for its review.
- 9a. In the event that the operation of this source results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the baghouses such that the baghouses are kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
- c. The dryers and tunnel oven shall only be operated with natural gas as the fuel. The use of any other fuel in the dryers or tunnel oven requires that the Permittee first obtain a construction permit from the Illinois EPA and then perform stack testing to verify compliance with all applicable requirements.
- 10a. Emissions and operation of material transfer and processing equipment shall not exceed the following limits:

<u>Equipment</u>	<u>Throughput</u>		<u>Uncontrolled</u>	<u>PM Emissions*</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>Emission Factor</u> <u>(Lbs/Ton)</u>	<u>(Lbs/Mo)</u>	<u>(Tons/Yr)</u>
P0001	5,438	54,375	6.6	358	1.79
P0002	2,175	21,750	5.5	120	0.60
P0003	181	1,813	1.46	2	0.01
P0004	1,003	10,031	1.46	14	0.07
P0005	2,175	21,750	5.5	120	0.60
P0006	1,088	10,875	1.46	16	0.08
P0007	1,088	10,875	1.46	16	0.08
P0010	7,830	78,300	6.6	516	2.58
P0011	6,917	69,165	3.3	228	1.14
P0012	914	9,135	2.2	20	0.10
P0013	870	8,700	0.36	4	0.02
P0014	585	6,281	0.12	2	0.01
P0015	628	6,281	0.12	2	0.01
P0016	420	4,196	0.12	2	0.01
P0017	628	6,281	0.12	2	0.01
P0018	628	6,281	0.12	2	0.01
P0019	3,654	36,540	0.48	18	0.09
P0020	3,654	36,540	0.48	18	0.09
P0021	1,305	13,050	0.48	6	0.03
P0023	4,525	45,250	0.48	22	0.11
P0030	3,180	31,800	1.50	359	0.24
P0031	2,767	27,666	1.58	48	0.22
P0032	750	7,500	17.20	130	0.65
P0033	45	450	0.12	2	0.01
				Total	8.56

* 99% Control Efficiency

These limits are based on standard emission factors (Table 11.24-2, AP-42, Fifth Edition, Volume I, August 1982), and transfer of material containing bauxite and alumina, transfer of non-bauxite and non-alumina materials.

- b. This permit is issued based on negligible emissions of PM from the five dryer oven (#1, 2, 3, 4, and 5), the bulk bag loss in weight system (P0009), precast mixer A (P0028), and precast mixer B (P0029). For this purpose emissions from each emission unit shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- c. Note that there is a "nested" limit on the emissions of particulate matter less than 10 microns (PM₁₀) as a result of the limit on particulate matter (PM) emissions. Limiting PM emissions also limits PM₁₀ emissions.
- d. VOM emissions and operation of the five dry ovens (#1, 2, 3, 4, & 5) from material processing and the taphole mix line shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Throughput</u>		<u>Process VOM Emission Factor</u>	<u>VOM Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(lbs/Ton)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
Five Dryer Ovens	1,248	12,480	1.8	1.12	11.23
Taphole Mix Production	3,180	31,800	0.57	0.91	<u>9.06</u>
				Total:	20.29

These limits are based on the maximum production rates and emission factors developed by the source.

- e. Fuel combustion emissions and operation of the rotary dryer, shrink tunnel oven, five dryer ovens, and 23 space heaters (combined) shall not exceed the following limits:

- i. Natural Gas Usage:

<u>(mmscf/Month)</u>	<u>(mmscf/Year)</u>
9	90

- ii. Emissions from the combustion of natural gas:

<u>Pollutant</u>	<u>Emission Factor (Lbs/mmscf)</u>	<u>Emissions (Tons/Month)</u>	<u>Emissions (Tons/Year)</u>
CO	84	0.38	3.78
NO _x	100	0.45	4.50
PM	7.6	0.03	0.34
SO ₂	0.6	0.01	0.03
VOM	5.5	0.02	0.25

These limits are based on the natural usage (90 mmscf/year), maximum hours of operation (8760 hours/year), and standard emission factors (Table 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

- f. This permit is issued based on negligible emissions of volatile organic material (VOM) from the two refined tar storage tanks, and the slurry oil storage tank. For this purpose, emissions from each emission unit shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 tons/year.
- g. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act from this source shall not exceed 0.9 tons/month and 9.0 tons/year of any single HAP and 2.25 tons/month and 22.5 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of any HAP from

this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

- h. Compliance with the annual limits of this permit shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 11a. Pursuant to 35 Ill. Adm. Code 201.282, every emission source or air pollution control equipment shall be subject to the following testing requirements for the purpose of determining the nature and quantities of specified air contaminant emissions and for the purpose of determining ground level and ambient air concentrations of such air contaminants:
 - i. Testing by Owner or Operator. The Illinois EPA may require the owner or operator of the emission source or air pollution control equipment to conduct such tests in accordance with procedures adopted by the Illinois EPA, at such reasonable times as may be specified by the Illinois EPA and at the expense of the owner or operator of the emission source or air pollution control equipment. The Illinois EPA may adopt procedures detailing methods of testing and formats for reporting results of testing. Such procedures and revisions thereto, shall not become effective until filed with the Secretary of State, as required by the APA Act. All such tests shall be made by or under the direction of a person qualified by training and/or experience in the field of air pollution testing. The Illinois EPA shall have the right to observe all aspects of such tests.
 - ii. Testing by the Illinois EPA. The Illinois EPA shall have the right to conduct such tests at any time at its own expense. Upon request of the Illinois EPA, the owner or operator of the emission source or air pollution control equipment shall provide, without charge to the Illinois EPA, necessary holes in stacks or ducts and other safe and proper testing facilities, including scaffolding, but excluding instruments and sensing devices, as may be necessary.
- b. Testing required by Condition 12 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 12. Pursuant to 35 Ill. Adm. Code 212.110(c), upon a written notification by the Illinois EPA, the owner or operator of a particulate matter emission unit subject to 35 Ill. Adm. Code Part 212 shall conduct the applicable testing for particulate matter emissions, opacity, or visible emissions at such person's own expense, to demonstrate compliance. Such test results shall be submitted to the Illinois EPA within thirty (30) days after conducting the test unless an alternative time for submittal is agreed to by the Illinois EPA.

13. Pursuant to 40 CFR 63.10(b)(3), if an owner or operator determines that his or her stationary source that emits (or has the potential to emit, without considering controls) one or more hazardous air pollutants regulated by any standard established pursuant to section 112(d) or (f) of the Clean Air Act, and that stationary source is in the source category regulated by the relevant standard, but that source is not subject to the relevant standard (or other requirement established under 40 CFR Part 63) because of limitations on the source's potential to emit or an exclusion, the owner or operator must keep a record of the applicability determination on site at the source for a period of 5 years after the determination, or until the source changes its operations to become an affected source, whichever comes first. The record of the applicability determination must be signed by the person making the determination and include an analysis (or other information) that demonstrates why the owner or operator believes the source is unaffected (e.g., because the source is an area source). The analysis (or other information) must be sufficiently detailed to allow the USEPA and/or Illinois EPA to make a finding about the source's applicability status with regard to the relevant standard or other requirement. If relevant, the analysis must be performed in accordance with requirements established in relevant subparts of 40 CFR Part 63 for this purpose for particular categories of stationary sources. If relevant, the analysis should be performed in accordance with USEPA guidance materials published to assist sources in making applicability determinations under Section 112 of the Clean Air Act, if any. The requirements to determine applicability of a standard under 40 CFR 63.1(b)(3) and to record the results of that determination under 40 CFR 63.10(b)(3) shall not by themselves create an obligation for the owner or operator to obtain a Title V permit.
14. Pursuant to 35 Ill. Adm. Code 212.110(e), the owner or operator of an emission unit subject to 35 Ill. Adm. Code Part 212 shall retain records of all tests which are performed. These records shall be retained for at least three (3) years after the date a test is performed.
15. Pursuant to 35 Ill. Adm. Code 218.129(f), the owner or operator of each storage vessel specified in 35 Ill. Adm. Code 218.119 shall maintain readily accessible records of the dimension of the storage vessel and an analysis of the capacity of the storage vessel. Each storage vessel with a design capacity less than 40,000 gallons is subject to no provisions of 35 Ill. Adm. Code Part 218 other than those required by maintaining readily accessible records of the dimensions of the storage vessel and analysis of the capacity of the storage vessel.
- 16a. Permittee shall maintain records of the following items so as to demonstrate compliance with the conditions of this permit:
 - i. Records addressing use of good operating practices for the baghouses:

- A. Records for periodic inspection of the baghouses with date, individual performing the inspection, and nature of inspection; and
 - B. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- ii. Amount of material containing bauxite and alumina processed for each location the material is handled (tons/month and tons/year);
 - iii. Amount of material that does not contain bauxite and alumina processed for each location the material is handled (tons/month and tons/year);
 - iv. Amount of pre-casting material processed by the dryers (tons/month and tons/year);
 - v. Castable formulations loaded into the precast mixers P0028 & P0029 (lbs/month and tons/year);
 - vi. Natural gas usage (mmscf/month and mmscf/year);
 - vii. Taphole mix production (tons/month and tons/year); and
 - viii. Monthly and annual emissions of CO, NO_x, PM, PM₁₀, SO₂, VOM and HAPs from the source, with supporting calculations (tons/month and tons/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five (5) years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer storage device) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.
17. Pursuant to 35 Ill. Adm. Code 212.110(d), a person planning to conduct testing for particulate matter emissions to demonstrate compliance shall give written notice to the Illinois EPA of that intent. Such notification shall be given at least thirty (30) days prior to the initiation of the test unless a shorter period is agreed to by the Illinois EPA. Such notification shall state the specific test methods from 35 Ill. Adm. Code 212.110 that will be used.
18. Pursuant to 35 Ill. Adm. Code 218.990, upon request by the Illinois EPA, the owner or operator of an emission unit which is exempt from the requirements of 35 Ill. Adm. Code 218 Subparts PP, QQ, RR, TT or 35 Ill. Adm. Code 218.208(b) shall submit records to the Illinois EPA within 30 calendar days from the date of the request that document that the emission unit is exempt from those requirements.

19a. If there is an exceedance of or a deviation from the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance or deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or deviation and efforts to reduce emissions and future occurrences.

b. Two (2) copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

It should be noted that this permit has been revised to include the operation of the equipment described in Construction Permit #07080019.

If you have any questions on this permit, please contact German Barria at 217/782-2113.

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: _____

ECB:GB:psj

cc: Illinois EPA, FOS Region 1
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from refractory product manufacturing operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels (e.g., 100 tons/year of PM₁₀ and VOM, 10 tons/year for any single HAP, and 25 tons/year for any combination of such HAP) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled, and control measures are more effective than required in this permit.

<u>Emission Unit</u>	EMISSIONS (Tons/Year)						<u>Single HAP</u>	<u>Combined HAPs</u>
	<u>CO</u>	<u>NO_x</u>	<u>PM</u>	<u>SO₂</u>	<u>VOM</u>			
Bulk Material Unloading (P0001)			1.79					
Refractory Manufacture BL#1 (P0002)			0.60					
Bag Dump Station - Binder Mfg (P0003)			0.01					
Skip Hoist & Granular TR Line 4 (P0004)			0.07					
Refractory Manufacture BL#2 (P0005)			0.60					
Bag Dump Station @BL#1&PL1 (P0006)			0.08					
Bag Breaking Station @ BL#2 & BL2 (P0007)			0.08					
Bulk Bag Loss-In-Weight System (P0009)			0.44					
New Bulk Unloading/Filling Silos (18) (P0010)			2.58					
Batching Line #3 (P0011)			1.14					
Batching Line #4 (P0012)			0.10					
Wet Mortar (Mortar Line #5) (P0013)			0.02					
Bag Breaking Station #6 (P0014)			0.01					
Bag Breaking Station #7 (P0015)			0.01					
Bag Breaking Station #8 (P0016)			0.01					
Bag Breaking Station #9 (P0017)			0.01					
Bag Breaking Station #10 (P0018)			0.01					
Castable Line #6 (P0019)			0.09					
Castable Line #7 (P0020)			0.09					
Castable Line #8 (P0021)			0.03					
Castable Line #10 (P0023)			0.11					
Precast Mixer A (P0028)			0.44					
Precast Mixer B (P0029)			0.44					
Tophole Line (Mix Production) (P0030)			0.24		9.06			
Taphole Batch System (P0031)			0.22					
Rotary Dryer & Eirich Mixer (P0032)			0.65					
Line #11 (P0033)			0.01					
Dry Ovens #1 - #5 (P0034, P0035, P0036, P0037, & P0038)			2.20		11.23			
Two Refined Tar Storage Tanks					0.88			
One Slurry Oil Storage Tank					0.44			
Natural Gas Combustion			3.78	4.50	0.34	0.03	0.25	
Totals:			<u>3.78</u>	<u>4.50</u>	<u>12.42</u>	<u>0.03</u>	<u>21.86</u>	<u>9.0</u>
								<u>22.5</u>

