

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

H.A. International, LLC  
Attn: Plant Manager  
1019 Jericho Road  
Aurora, Illinois 60506

Application No.: 02040097  
Applicant's Designation:  
Subject: Foundry Sand Manufacturing Plant  
Date Issued: November 19, 2003  
Location: 1019 Jericho Road, Aurora

I. D. No.: 089800AAC  
Date Received: April 25, 2002  
Expiration Date: November 19, 2008

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

One Silane-Treated Sand Line Comprised of:

Three Sand Receiving Storage Silos;  
Two Sand Conveyors, Sand Storage Hopper, Sand Screen, Sand/Silane Mixer, Product Conveyor, Product Storage Hopper, Product Bagging and Loading-Out Operations all Controlled by Baghouse;

Two phenol resin-coated sand lines comprised of:

Sand Receiving and Conveying System;  
Two Sand/Resin Mixers Controlled by Two Scrubbers;  
One secondary mixer;  
Two Sand Heaters Controlled by Two Cyclones, Two Secondary Mixers, Three Screens, Two Coolers, Bagging and Loading-Out Operations all Controlled by Baghouse

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 to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 10 tons/year for a single hazardous air pollutant (HAP) and 25 tons/year for totaled HAP, 100 tons/year for volatile organic materials (VOM) and particulate matter with an aerodynamic diameter of 10 microns or less (PM-10)). As a result, the source is excluded from the requirements 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.
- 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.
- 2. This permit is issued based upon the plant being subject to the control requirements of 35 Ill. Adm. Code Part 218, Subpart TT. Compliance with the requirements of this subpart is achieved through the use of a capture system and control device that provides at least 81 percent reduction in the overall emissions of volatile organic material (VOM) from the subject emission units.
- 3. Operations and phenol emission of two resin-coated lines (combined) shall not exceed the following limits:

Phenol Usage in Resins		Emission Factor	Control Efficiency	Phenol Emissions	
<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Wt. %)</u>	<u>(%)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
8.0	73.0	65	81	1.0	9.0

These limits define the potential VOM and HAP emissions and are based on the maximum production rate, phenol retention measurements performed at the plant and minimum required control efficiency. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- 4. Operations and methanol emission of silane-coated line shall not exceed the following limits:

Silane Usage		Methanol Content	Methanol Emissions	
<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Wt. %)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
60.0	550.0	0.2	0.1	1.1

These limits define the potential VOM and HAP emissions and are based on the maximum production rate and methanol content of the resin. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- 5. This permit is issued based on negligible emissions of formaldehyde and non-HAP VOM from the silane and resin-coated sand lines. For this purpose, emissions of each contaminant shall not exceed nominal emission rate of 0.1 lb/hour and 0.44 tons/year.
- 6. Operations and emissions of particulate matter from sand receiving and handling operations shall not exceed the following limits:
  - a. For two resin-coated sand mixers controlled by the scrubbers:

Sand Throughput		Emission Factor	Control Efficiency	PM Emissions	
<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Lb/Ton)</u>	<u>(%)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
20,000	200,000	0.2	90	0.2	2.0

- b. For resin-coated sand line A uncontrolled mixer:

Sand Throughput		Emission Factor	PM Emissions	
<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Lb/Ton)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
13,000	130,000	0.22	1.4	14.3

- c. For two resin-coated sand lines (excluding mixers):

Sand Throughput		Emission Factor	Control Efficiency	PM Emissions	
<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>	<u>(Lb/Ton)</u>	<u>(%)</u>	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>
20,000	200,000	4.9	99	0.5	4.9

These limits define the potential particulate matter emission and are based on the maximum production rate and standard emission factor given by AP-42 for secondary mixer (Table 11.12-2, SCC 3-05-011-09, Revision 10/01), stack test data (6/93) for primary mixers and emission measurements performed at the baghouse controlling resin-coated sand lines. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

7. This permit is issued based on negligible emission of particulate matter from silane-treated sand line and resin-coated sand receiving operations. For this purpose emission from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.
8. Operation and emissions of the two sand heaters (combined) shall not exceed the following limits:

Natural Gas Usage: 4.0 mmscf/month, 38.5 mmscf/year

<u>Pollutant</u>	<u>Emission Factor (Lb/mmscf)</u>	<u>Emissions (Lb/Mo)</u>	<u>(Tons/Yr)</u>
Nitrogen Oxides (NO <sub>x</sub> )	100	400	1.9
Carbon Monoxide (CO)	84	336	1.6
Particulate Matter (PM)	7.6	30	0.1
Volatile Organic Material (VOM)	5.5	22	0.1

These limits are based on the maximum boilers operations and standard emission factors given by AP-42. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

9. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish by rule which would

require the Permittee to obtain a Clean Air Act Permit Program permit from the Illinois EPA. 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 Clean Air Act Permit Program permit from the Illinois EPA.

10. The Permittee shall maintain monthly records of the following items:
  - a. Names and amount of VOM and HAP-containing raw materials used (tons/month and tons/year);
  - b. VOM and HAP content in the raw materials (wt. %);
  - c. VOM and HAP emission calculations (tons/month and tons/year); and
  - d. Sand usage (tons/month and tons/year).
11. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three 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) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to the Illinois EPA or USEPA request for records during the course of a source inspection.
12. If there is an exceedance of the requirements of this permit, as determined by the record 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. The report shall include the emissions released, a copy of the relevant records, and a description of the exceedance or violation, and efforts to reduce emissions and future occurrences.
13. The Permittee shall submit the following additional information with the Annual Emissions Report, due May 1st of each year:
  - a. Names and amount of VOM-containing raw materials used (tons/year) and their VOM and HAP content (wt. %) from the prior calendar year;
  - b. Sand usage (tons/year).
14. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system 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 Agency'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

If you have any questions on this permit, please call Valeriy Brodsky at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:VJB:psj

cc: Illinois EPA, FOS Region 1  
Illinois EPA, Compliance Section  
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emission from the Foundry Sand Manufacturing Plant 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. This is use of 200,000 tons of sand and 73.0 tons of phenol in resins per year. The resulting maximum emissions are well below the levels, e.g., 10 tons per year for a single HAP, 25 tons per year for totaled HAP and 100 tons/year for VOM and PM-10 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 material is handled, and control measures are more effective than required in this permit.

Equipment	E M I S S I O N S						
	(Tons/Year)						
	NO <sub>x</sub>	CO	PM	VOM	Phenol	Formaldehyde	Methanol
Resin-coated line	--	--	0.4	9.4	9.0	0.4	--
Silane-coated line	--	--	0.4	1.5	--	--	1.1
Sand Handling	--	--	21.2	--	--	--	--
Sand Heaters	1.9	1.6	0.1	0.1	--	--	--
Total	1.9	1.6	22.1	11.0	9.0	0.4	1.1

VJB:psj