

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - RENEWAL

PERMITTEE

Geske and Sons, Inc.  
Attn: Lori Geske  
400 East Terra Cotta Avenue  
Crystal Lake, Illinois 60014

Application No.: 72111191 I.D. No.: 111801ABA  
Applicant's Designation: Date Received: August 16, 2007  
Subject: Asphalt Plant and Aggregate Plant  
Date Issued: January 29, 2009 Expiration Date: January 29, 2014  
Location: 4020 Northwest Highway, Crystal Lake, Mc Henry County

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of batch-mix asphalt plant with a natural gas-fired dryer controlled by a baghouse, six liquid asphalt storage tanks (5 - 10,000 gallon, 1 - 30,000 gallon) and a crusher as described in the 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., less than 100 tons/year for Carbon Monoxide (CO)). 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 permit(s) for this location.
- 2a. 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 the requirements of 35 Ill. Adm. Code 212.122, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
- b. 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.

- c. 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 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.
- 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 excess 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 or an equivalent device approved by the Illinois EPA according to the provisions of 35 Ill. Adm. Code 201, and further processed consistent with 35 Ill. Adm. Code 218.108, or unless such tank is a pressure tank as described in 35 Ill. Adm. Code 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.
- 5a. The baghouse shall be in operation at all times when the associated dryer is in operation and emitting air contaminants.
- b. The Permittee shall, in accordance with the manufacturer(s) and/or vendor(s) recommendations, perform periodic maintenance on the baghouse such that the baghouse is kept in proper working condition and not cause a violation of the Illinois Environmental Protection Act or regulations promulgated therein.
- c. The dryer, boilers, and tank heaters associated with the asphalt plant shall only be operated with natural gas as the fuel. The use of any other fuel in the dryer, boilers, and tank heaters 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.

- d. 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 nuisance.
- e. The surface moisture content of the aggregate to be processed in the crushing plant associated with the affected batch-mix asphalt plant shall be at least 1.5% by weight. The Permittee shall show compliance with this requirement as follows:
  - i. Water sprays shall be used on the emission units associated with the crushing plant (e.g., crushers, conveyors, and stockpiles, etc.) as necessary, except when weather conditions are below or expected to fall below freezing temperatures, to produce a moisture content of 1.5% by weight or higher to reduce particulate matter emissions; or
  - ii. Demonstrate compliance with Condition 4(e) by following the testing requirements of Condition 9.

6a. Emissions and operation of asphalt plant shall not exceed the following limits:

i. Asphalt Production Limits:

<u>(Tons/Hour)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
200	80,000	480,000

ii. Emissions from Batch Mixer/Dryer:

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(Lbs/Ton)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	0.40	16.00	96.00
NO <sub>x</sub>	0.025	1.00	6.00
PM	0.042	1.68	10.08
PM <sub>10</sub>	0.027	1.08	6.48
SO <sub>2</sub>	0.0046	0.18	1.10
VOM	0.0082	0.33	1.97

iii. Emissions from Asphalt Silo Loading and Truck Loadout:

<u>Pollutant</u>	Emission Factor	Emissions	
	<u>(Lbs/Ton)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
CO	0.0007	0.03	0.17
PM	0.0007	0.03	0.17
PM <sub>10</sub>	0.0007	0.03	0.17
VOM	0.0048	0.19	1.15

iv. These limits are based on maximum asphalt production and standard AP-42 emission factors (Tables 11.1-1, 11.1-5, 11.1-6, and 11.1-14 AP-42, Volume I, Fifth Edition, Update 2001, December 2000).

b. Emissions and operation of asphalt storage tank heater shall not exceed the following limits:

<u>Equipment</u>	<u>Heat Input Rating (mmBtu/Hr)</u>	<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
			<u>(Lbs/mmscf)</u>	<u>(Lbs/Hr)</u>	<u>(Tons/Yr)</u>
Natural Gas-Fired	2.9	CO	84	0.24	1.07
Asphalt Tank Heater		NO <sub>x</sub>	100	0.28	1.27
		PM	7.6	0.02	0.10
		SO <sub>2</sub>	0.6	0.002	0.01
		VOM	5.5	0.02	0.07

These limits are based on the maximum firing rate of the tank heater, the maximum hours of operation (8,760 hours/year), and standard emission factors (Tables 1.4-1 and 1.4-2, AP-42, Fifth Edition, Volume I, Supplement D, July 1998).

c. This permit is issued based on negligible emissions of volatile organic material (VOM) from 5 liquid asphalt storage tanks. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

d. Emissions and operation of Crusher shall not exceed the following limits:

<u>Equipment</u>	<u>Throughput</u>		<u>Pollutant</u>	<u>Emission Factor</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>(Lbs/Ton)</u>	<u>(Lbs/Mo)</u>	<u>(Tons/Yr)</u>
Crusher	40,000	240,000	PM	0.0012	48	0.14

These limits are based on maximum throughput, use of wet suppression or natural moisture of the aggregate, and standard emission factors (Table 11.19.2-2, AP-42, Fifth Edition, Volume I, Update 2004, August 2004).

e. 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).

7a. 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 8 shall be performed upon a written request from the Illinois EPA by a qualified independent testing service.
- 8a Pursuant to 35 Ill. Adm. Code 212.107, for both fugitive and nonfugitive particulate matter emissions, a determination as to the presence or absence of visible emissions from emission units shall be conducted in accordance with Method 22, 40 CFR part 60, Appendix A, except that the length of the observing period shall be at the discretion of the observer, but not less than one minute. 35 Ill. Adm. Code 212 Subpart A shall not apply to 35 Ill. Adm. Code 212.301.
- b. Pursuant to 35 Ill. Adm. Code 212.109, except as otherwise provided in 35 Ill. Adm. Code Part 212, and except for the methods of data reduction when applied to 35 Ill. Adm. Code 212.122 and 212.123, measurements of opacity shall be conducted in accordance with Method 9, 40 CFR Part 60, Appendix A, and the procedures in 40 CFR 60.675(c) and (d), if applicable, except that for roadways and parking areas the number of readings required for each vehicle pass will be three taken at 5-second intervals. The first reading shall be at the point of maximum opacity and second and third readings shall be made at the same point, the observer standing at right angles to the plume at least 15 feet away from the plume and observing 4 feet above the surface of the roadway or parking area. After four vehicles have passed, the 12 readings will be averaged.
  - c. Pursuant to 35 Ill. Adm. Code 212.110(a), measurement of particulate matter emissions from stationary emission units subject to 35 Ill. Adm. Code Part 212 shall be conducted in accordance with 40 CFR Part 60, Appendix A, Methods 5, 5A, 5D, or 5E.

- d. Pursuant to 35 Ill. Adm. Code 212.110(b), the volumetric flow rate and gas velocity shall be determined in accordance with 40 CFR Part 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 3, and 4.
  - e. 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.
9. The moisture content of a representative sample of the aggregate processed in the crushing plant associated with the affected drum-mix asphalt plant shall be measured at least one per week using ASTM Procedures (C566-67) for total moisture content of material.
- 10a. Inspections of the asphalt plant and control system equipment and operations shall be performed as necessary but at least once per week when the affected asphalt plant is in operation to confirm compliance with the requirements of this permit.
- b. If the Permittee is relying on Condition 5(e)(i) to demonstrate compliance with Condition 5(e), the Permittee shall monitor for the water spray equipment as follows:
    - i. The water supply to the spray equipment shall be equipped with a metering device used to determine water usage for the control of particulate matter emissions.
    - ii. Inspections of water spray equipment and operation (such as leaking, maintaining adequate flow, clogging of flow lines, etc.) shall be performed at least once per week when the crushing plant associated with the affected drum-mix asphalt plant is in operation.
11. 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.
- 12a. The 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 cyclone and baghouse:
    - A. Operating logs for the asphalt plant dryer baghouse, including operating data (pressure drop or stack condition), daily upon startup;

- B. Records for periodic inspection of the baghouse with date, individual performing the inspection, and nature of inspection; and
  - C. Records for prompt repair of defects, with identification and description of defect, effect on emissions, date identified, date repaired, and nature of repair.
- ii. Records addressing use of good operating practices for the crushing plant:
- A. If the Permittee is relying on the requirements of Condition 9 to demonstrate compliance with Condition 5(e), the Permittee shall maintain records of all moisture content tests performed including date, time, individual performing test, location of sample (e.g., prior to crushing, stockpiles, as shipped etc.);
  - B. If the Permittee is relying on Condition 10(b) to demonstrate compliance with Condition 5(e), the Permittee shall maintain operating logs for the water spray equipment, including dates and times of usage, malfunctions (type, date, and measures taken to correct), water pressure, and dates when there was at least 0.25" of rainfall during the preceding 24 hours and the water spray equipment was not operated; and
  - C. The Permittee shall maintain weekly records of water consumption in the spray equipment, as determined by the meter required by Condition 10(b)(i) and the amount of precipitation specified in Condition 12(a)(ii)(B).
- iii. Asphalt production (tons/month and tons/year);
- iv. Natural Gas consumption (mmscf/month and mmscf/year);
- v. Aggregate throughput (tons/month and tons/year); and
- vi. Monthly and Annual CO, NO<sub>x</sub>, PM, SO<sub>2</sub>, and VOM emissions 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) 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.

13. 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.
14. If there is an exceedance of or 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/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.
15. 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
16. The assembly of any these plants at a new location will require a construction permit for the new location. This permit must be obtained prior to commencing construction at the new location.

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

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

Date Signed: \_\_\_\_\_

ECB:GB:jws

cc: Illinois EPA, FOS Region 1  
Lotus Notes

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from the asphalt plant and aggregate crushing 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 handling 480,000 tons of asphalt production per year, a heat input rating of 2.9 million Btu per hour for the asphalt tank heater, and 240,000 tons of aggregate per year. The resulting maximum emissions are below the levels (e.g., 100 tons per year of Carbon Monoxide (CO)) 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>	E M I S S I O N S (Tons/Year)				
	<u>CO</u>	<u>NO<sub>x</sub></u>	<u>PM</u>	<u>SO<sub>2</sub></u>	<u>VOM</u>
Batch Mixer/Dryer	96.00	6.00	10.08	1.10	1.97
Asphalt Silo Loading and Truck Loadout	0.17		0.17		1.15
Asphalt Storage Tank Heater	1.07	1.27	0.10	0.01	0.07
5 Liquid Asphalt Storage Tanks					2.20
Crusher	-----	-----	0.14	-----	-----
Totals	97.24	7.27	10.49	1.11	5.39

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