

217/782-2113

"RENEWAL"  
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT -- NSPS SOURCE

PERMITTEE

K-Five Construction Corporation  
Attn: John Sullivan  
13769 Main Street  
Lemont, Illinois 60439

<u>Application No.:</u> 74100058	<u>I.D. No.:</u> 031177AAB
<u>Applicant's Designation:</u>	<u>Date Received:</u> October 4, 1999
<u>Subject:</u> Asphalt Plant and Aggregate Plant	
<u>Date Issued:</u>	<u>Expiration Date:</u>
<u>Location:</u> 162nd Street and Claremont Avenue, Markham	

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of drum-mix asphalt plant with a natural gas-fired rotary dryer equipped with a baghouse, diesel fuel storage tank, one above ground asphalt storage tank, one above ground emulsion storage tank, one underground gasoline storage tank, and one portable crushing plant comprised of two crushers, one screen, and 12 conveyors 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 carbon monoxide (CO) and volatile organic material (VOM) from the asphalt plant to less than major source thresholds, as described in Attachment A. As a result, the source is excluded from requirements to obtain a Clean Air Act Permit Program permit.
- b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
2. This Asphalt Plant is subject to New Source Performance Standards (NSPS), 40 CFR 60, Subparts A and I. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
- 3a. The emissions from the Asphalt Plant shall not contain particulate matter in excess of 0.04 gr/dscf and shall not exhibit 20% opacity or greater, pursuant to the NSPS, 40 CFR 60.92.
- b. At all times the Permittee shall also maintain and operate the Asphalt Plant, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to the NSPS, 40 CFR 60.11(d).

- 4a. Operation of the Asphalt Plant shall not exceed the following limits:

Asphalt Concrete Production Rate: 450 tons/hour, and 760,000 tons/yr  
 Asphalt Tank Heater Firing Rate: 1.7 mmBtu/hr

- b. Emissions and operation of asphalt plant shall not exceed the following limits:

<u>Equipment</u>	<u>Throughput</u>		<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>Factor</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Gas-Fired Drum						
Mix Asphalt Plant	110,000	760,000	TSP	0.0089	979	3.382
			CO	0.056	6,160	21.28
			NO <sub>x</sub>	0.03	3,300	11.4
			SO <sub>2</sub>	0.0033	363	1.254
			VOM	0.015	1,650	5.7

These limits are based on standard AP-42 emission factors and a maximum hourly throughput of 450 tons. Compliance with annual limits shall be determined from a running total of 12 months of data.

- c. Emissions and operation of tank heater shall not exceed the following limits:

<u>Equipment</u>	<u>Maximum</u>	<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>Firing Rate</u>		<u>Factor</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Asphalt Tank Heater	1.7	CO	84	0.14	0.61
		NO <sub>x</sub>	100	0.17	0.73

These limits are based on standard AP-42 emission factors and 8,760 hours of operation. Compliance with annual limits shall be determined from a running total of 12 months of data.

- d. This permit is issued based on the use of natural gas for the dryer and the tank heater. Use of any other fuel will require a revised permit.
- e. This permit is issued based on negligible emissions of volatile organic material (VOM) from asphalt storage tank, gasoline storage tank, diesel fuel storage tank, and emulsion storage tank. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.
- 5a. Within 90 days of a written request from the Illinois EPA, pursuant to 35 Ill. Adm. code Section 201.282, the emissions and opacity of the exhaust from the plant shall be measured by an approved testing service, during conditions which are representative of the maximum performance. The Illinois EPA may provide additional time for the performance of this testing upon request from the Permittee which shows that it is not feasible to preform representative testing within 90 days.

- b. i. The following methods and procedures shall be used for testing of emissions. Refer to 40 CFR 60, Appendix A for USEPA test methods.

Opacity	USEPA Method 9
Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Particulate Matter	USEPA Method 5

- ii. A test shall consist of three separate runs each at least 60 minutes in duration. Compliance shall be determined from the average of the runs provided that the Illinois EPA may accept the arithmetic mean of the two runs in circumstances described in 40 CFR 60.8(f).

- c. Testing shall be performed by a qualified independent testing service.

- d. At least 30 days prior to the actual date of testing a written test plan shall be submitted to the Illinois EPA for review and approval. This plan shall describe the specific procedures for testing, including:

- i. The person(s) who will be performing sampling and analysis and their experience with similar tests.
- ii. The conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum operating rate, the levels of operating parameters at or within which compliance is intended to be shown, if applicable, and the means by which the operating parameters for the process and any control equipment will be determined.

- e. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification for the expected date of testing shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of five (5) working days prior to the actual date of the tests. The Illinois EPA may, at its discretion, accept notification with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the testing.

- 6. The Permittee shall maintain annual and monthly records of the following items:

- a. Asphalt production (tons/mo, tons/yr);
- b. Natural gas usage in rotary dryer (mmscf/mo, mmscf/yr); and
- c. Natural gas usage in asphalt tank heater (mmscf/mo, mmscf/yr).

7. If the rotary dryer control system is not operating properly while the dryer is operated or there is an exceedance of the requirements of this permit as determined by the records required by Condition 6, the Permittee shall submit a report within 30 days after the exceedance. 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 violation and efforts to reduce emissions and future occurrences.
8. The assembly of this plant 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.
9. This permit supersedes the current permit(s) issued for this location.
10. The Permittee shall maintain operating and maintenance logs for the dryer control system, including: maintenance activities, with date and description of inspections, repair actions, and equipment or filter bag replacements, etc.
11. The Final Report(s) for all tests shall be submitted within 90 days after the date of the test. The Final Report shall include as a minimum:
  - i. General information describing the test, including the name and identification of the emission source which was tested, date of test, names of personnel performing the tests, and Illinois EPA observers, if any;
  - ii. A summary of results;
  - iii. Description of test procedures, including description of sampling points, test equipment, and test schedule;
  - iv. Detailed description of test conditions, including:
    - A. Process information, i.e., process rate, aggregate type, fuel type, and firing rate.
    - B. Control equipment information, i.e., equipment condition and operating parameters during testing.
  - v. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.

- 12. The 30 conveyors, 2 crushers, and 1 screen are subject to New Source Performance Standards (NSPS), 40 CFR 60, Subparts I and OOO. The Illinois EPA is administering these standards in Illinois on behalf of the United States EPA under a delegation agreement.
- 13a. Emissions of particulate matter from grinding mills, screens (except from truck dumping), bucket elevators, transfer points on belt conveyors, bagging operations, and storage bins, shall not exceed 10 percent opacity, (40 CFR 60.672(b) and (d)).
- b. Emissions of particulate matter from the crushers (except from truck dumping), shall not exceed 15 percent opacity, (40 CFR 60.672(c) and (d)).
- c. At all times the Permittee shall also maintain and operate this equipment, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions.
- 14a. Emissions and operation of portable aggregate processing plant shall not exceed the following limits:

<u>Equipment</u>	<u>Throughput</u>		<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>Factor</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
2 Crushers	200,000	1,200,000	TSP	0.0007	140	0.42
Screen	100,000	600,000	TSP	0.00176	176	0.528
12 Conveyors	1,200,000	7,200,000	TSP	0.0001	120	0.36

These limits are based on standard AP-42 emission factors and a maximum hourly throughput of 400 tons. Compliance with annual limits shall be determined from a running total of 12 months of data.

- b. The moisture content of the aggregate as crushed shall be at least 1.5% by weight so as to reduce emissions of particulate matter.
- c. The Permittee shall show compliance with this requirement as follows:
  - i. The moisture content of a representative sample of the aggregate shall be measured at least once per week using ASTM Procedures (C566-67) for total moisture content of material. Compliance with this requirement may be presumed if moisture content of aggregate as shipped is at least 1.5%; or
  - ii. A. Water sprays shall be used at each crusher and on other emission units as necessary, except when weather conditions are below or expected to fall below freezing temperatures, to provide moisture that will reduce emissions of particulate matter.

- B. 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.
  - C. Inspections of water spray equipment and operation (such as leaking, adequate flow maintain, clogging of flow lines, etc.) shall be performed at least once per week when the facility is in operation, OR
- iii. Water saturated materials mined below the water table are being processed.
15. The Permittee shall maintain annual and monthly records of the following items:
- a. Aggregate throughput (tons/mo, tons/yr).
- 16a. Within 60 days of a written request from the Illinois EPA, pursuant to 35 Ill Adm. Code Section 201.282, the opacity from an affected facility subject to the NSPS shall be measured during conditions which are representative of the maximum performance. The Illinois EPA may provide additional time for the performance of this testing upon request from the Permittee which shows that it is not feasible to perform representative testing within 60 days.
- b. i. The following methods and procedures shall be used for opacity measurements.  
  
USEPA Method 9, 40 CFR 60 Appendix A
  - ii. A test shall consist of 30 sets of 24 consecutive observations.
- c. Opacity measurements shall be performed by a certified observer.
  - d. The Illinois EPA shall be notified prior to these measurements to enable the Illinois EPA to observe these measurements. Notification of the expected date of the measurements shall be submitted a minimum of thirty (30) days prior to the expected date. Notification of the actual date and expected time of measurement shall be submitted a minimum of five (5) working days prior to the actual date of the measurement. The Illinois EPA may, at its discretion, accept notification with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe the measurements.
- 17a. If the Permittee is relying on 14(c)(ii)(A) above to show compliance 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 or as shipped.

If the Permittee is relying on 14(c)(ii)(B) above to show compliance 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 enough rain that the water spray equipment was not operated.

- b. The Permittee shall maintain weekly records of water consumption in the spray equipment, as determined by the meter required by Condition 14(c)(ii)(B)(2).
18. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA within 30 days after the exceedance. The report shall include the emissions released in accordance with the record keeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences. This report should be sent to:
- Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276
19. The assembly of this plant 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.
20. The Final Report(s) for all performance tests shall be submitted within 60 days after the date of the test. The Final Report shall include as a minimum:
- a. General information describing the test, including the name and identification of the emission source which was tested, date of test, names of personnel performing the tests, and Illinois EPA observers, if any;
  - b. A summary of results;
  - c. A copy of certification for opacity observation of the person who performed the test;
  - d. Detailed description of test conditions, including:
    - i. Process information, i.e., process rate and aggregate type.
    - ii. Control equipment information, i.e., equipment condition and operating parameters during testing.

21. 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 Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Eisenhower Tower  
1701 South First Avenue  
Maywood, Illinois 60153

22. The records required by this permit shall be retained at a readily accessible location at the plant for at least 3 years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request.
23. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including material handling or storage activity, beyond the property line of the emission source, pursuant to 35 Ill Adm. Code 212.301.
24. 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.

Please note that this permit has been revised to incorporate the operation of Construction Permit #99010028.

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

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

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cc: IEPA, FOS Region 1  
USEPA

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 760,000 tons of asphalt production per year and 600,000 tons of aggregate per year. The resulting maximum emissions are well below the levels, e.g., 100 tons per year of carbon monoxide (CO) and 25 tons per year of volatile organic material (VOM) 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.

1a. Operation of the Asphalt Plant shall not exceed the following limits:

Asphalt Concrete Production Rate: 450 tons/hour, and 760,000 tons/yr  
 Asphalt Tank Heater Firing Rate: 1.7 mmBtu/hr

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

<u>Equipment</u>	<u>Throughput</u>		<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>Factor</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Gas-Fired Drum						
Mix Asphalt Plant	110,000	760,000	TSP	0.0089	979	3.382
			CO	0.056	6,160	21.28
			NO <sub>x</sub>	0.03	3,300	11.4
			SO <sub>2</sub>	0.0033	363	1.254
			VOM	0.015	1,650	5.7

These limits are based on standard AP-42 emission factors and a maximum hourly throughput of 450 tons. Compliance with annual limits shall be determined from a running total of 12 months of data.

c. Emissions and operation of tank heater shall not exceed the following limits:

<u>Equipment</u>	<u>Maximum Firing Rate (mmBtu/Hr)</u>	<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
			<u>Factor (Lb/Ton)</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
Asphalt Tank Heater	1.7	CO	84	0.14	0.61
		NO <sub>x</sub>	100	0.17	0.73

These limits are based on standard AP-42 emission factors and 8,760 hours of operation. Compliance with annual limits shall be determined from a running total of 12 months of data.

d. This permit is issued based on the use of natural gas for the dryer and the tank heater. Use of any other fuel will require a revised permit.

- e. This permit is issued based on negligible emissions of volatile organic material (VOM) from asphalt storage tank, gasoline storage tank, diesel fuels storage tank, and emulsion storage tank. For this purpose emissions from each emission source shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/yr.
- 2. Emissions and operation of portable aggregate processing plant shall not exceed the following limits:

<u>Equipment</u>	<u>Throughput</u>		<u>Pollutant</u>	<u>Emission</u>	<u>Emissions</u>	
	<u>(Tons/Mo)</u>	<u>(Tons/Yr)</u>		<u>Factor</u>	<u>(Lb/Mo)</u>	<u>(Tons/Yr)</u>
2 Crushers	200,000	1,200,000	TSP	0.0007	140	0.42
Screen	100,000	600,000	TSP	0.00176	176	0.528
12 Conveyors	1,200,000	7,200,000	TSP	0.0001	120	0.36

These limits are based on standard AP-42 emission factors and a maximum hourly throughput of 41.00 tons. Compliance with annual limits shall be determined from a running total of 12 months of data.

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## PROJECT SUMMARY

### I. Introduction

K-Five Construction Corporation currently operates under federally enforceable state operating permit (FESOP) which was issued five years ago and is close to its expiration date. The company requested a renewal of their FESOP to continue to operate as non-major source for the purposes of the Clean Air Act Permit Program (CAAPP). Production and emission limitations, as well as monitoring and recordkeeping conditions contained in the FESOP have prevented the facility from being a major source and will assure this status in the future. These conditions would be enforceable by both the State of Illinois and USEPA.

### II. Source Description

K-Five Construction Corporation operates a gas fired Drum-Mix Asphalt Plant, a small gas fired tank heater, storage tanks, and a portable aggregate processing plant. Both the aggregate and asphalt plants are subject to NSPS.

### III. Emissions

The main source of emissions from this facility is the asphalt plant. This process generates a wide spectrum of emissions predominately represented by Carbon Monoxide (CO), Nitrous Oxides (NO<sub>x</sub>), Volatile Organic Material (VOM), and Particulate Matter (PM). The storage tanks emit nominal amounts of Volatile Organic Material (VOM). The operation of the portable aggregate processing plant emits Particulate Matter (PM). Fuel combustion in the tank heater emits primarily Carbon Monoxide (CO) and Nitrous Oxides (NO<sub>x</sub>).

### IV. Applicable Emission Standards

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The Board has standards for sources of Volatile Organic Material (VOM) and Carbon Monoxide (CO) emission. This site readily complies with all applicable Board standards.

### V. Proposed Permit

The conditions of the proposed permit contain limitations and requirements to assure that this facility will be operated as a non-major source. The permit sets limitations on asphalt production and processed aggregate. These limitations are consistent with the historical operation and capacity of the facility.

The permit conditions also establish appropriate compliance procedures, including inspection practices, recordkeeping requirements, and reporting requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the facility is operating within the limitations set by the permit and are properly controlling emissions.

**VI. Request for Comments**

It is the Illinois EPA's preliminary determination that the facility meets all applicable state and federal air pollution control requirements, subject to the conditions proposed in the draft permit. The Illinois EPA is therefore proposing to issue a permit with federally enforceable limits for this operation.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.