

9-28-99

**NEW SOURCE CONSTRUCTION PERMIT and
SOURCE SPECIFIC OPERATING AGREEMENT (SSOA)
OFFICE OF AIR MANAGEMENT**

**Bethlehem Sand & Gravel Co., LLC
Camp Creek Road
Bethlehem, Indiana 47104**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: NSR/SSOA 019-12114-00101	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

9-28-99
TABLE OF CONTENTS

A SOURCE SUMMARY

- A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]
- A.2 Emission Units and Pollution Control Equipment Summary
- A.3 SSOA Applicability [326 IAC 2-9-1]

B GENERAL CONSTRUCTION CONDITIONS

- B.1 Permit No Defense [IC 13]
- B.2 Definitions
- B.3 Effective Date of the Permit [IC 13-15-5-3]
- B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]
- B.5 Modification to Permit [326 IAC 2]
- B.6 Source Specific Operating Agreement Program [326 IAC 2-9]
- B.7 NSPS Reporting Requirements

C SOURCE OPERATION CONDITIONS

- C.1 Source Status [326 IAC 2-2][40 CFR 52.21][326 IAC 2-9]
- C.2 Preventive Maintenance Plan [326 IAC 1-6-3]
- C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]
- C.4 Source Modification [326 IAC 2-7-10.5]
- C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]
- C.6 Permit Revocation [326 IAC 2-1-9]
- C.7 Opacity [326 IAC 5-1]
- C.8 Fugitive Dust Emissions [326 IAC 6-4]
- C.9 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Testing Requirements

- C.10 Performance Testing [326 IAC 3-6]

Compliance Monitoring Requirements

- C.11 Compliance Monitoring [326 IAC 2-1.1-11]
- C.12 Monitoring Methods [326 IAC 3]

Record Keeping and Reporting Requirements

- C.13 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-3]
- C.14 General Record Keeping Requirements [326 IAC 2-6.1-2]
- C.15 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]
- C.16 Annual Notification [326 IAC 2-9-7]

D EMISSIONS UNIT OPERATION CONDITIONS – Sand and Gravel Operations

Emission Limitations and Standards

- D.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]
- D.2 Annual Throughput [326 IAC 2-9-7]
- D.3 Number of Facilities [326 IAC 2-9-7]
- D.4 Opacity [326 IAC 2-9-7] [326 IAC 12] [40 CFR 60.670, Subpart 000]
- D.5 Opacity [326 IAC 2-9-7]

Compliance Determination Requirements

- D.6 Dust Suppression for Screening and Conveying Operations [326 2-9-7]
- D.7 Particulate Matter [326 IAC 2-9-7]
- D.8 Testing Requirements [326 IAC 3-6][40 CFR 60.670, Subpart 000]

Record Keeping and Reporting Requirements
D.9 Record Keeping Requirements
D.10 Reporting Requirements

Annual Notification & Certification Form
Affidavit of Construction

SECTION A

9-28-99 SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary source that washes and separates sand and gravel.

Authorized Individual: James Dossett
Source Address: Camp Creek Road, Bethlehem, IN 47104
Mailing Address: 1561 E. Washington Street, Louisville, KY 40206
Phone Number: (502) 587-9507
SIC Code: 1442
County Location: Clark
County Status: Moderate nonattainment for ozone
Attainment area for all other criteria pollutants
Source Status: Minor Source Operating Permit
Minor Source, under PSD Rules
Minor Source, Section 112 of the Clean Air Act

A.2 Emissions units and Pollution Control Equipment Summary

This stationary source with an annual throughput of less than three million one hundred thousand (3,100,000) tons per year is approved to construct and operate the following emissions units and pollution control devices:

- (a) one (1) truck dump hopper, identified as 1, with a capacity of 600 tons per hour,
- (b) one (1) wash screen (6' x 20' triple deck), identified as 3, with a capacity of 600 tons per hour,
- (c) one (1) semi-portable sand washing plant with 44" sand screws, identified as 4, with a capacity of 500 tons per hour,
- (d) one (1) 44" x 32' single screw fine material washer, identified as 7, with a capacity of 450 tons per hour,
- (e) one (1) 44" x 20' single screw coarse material washer, identified as 13, with a capacity of 400 tons per hour,
- (f) one (1) truck dump hopper, identified as 15, with a capacity of 600 tons per hour, and
- (g) one conveying operation consisting of the following conveyors:
 - (1) one (1) 36" screen feed conveyor, identified as 2, with a capacity of 600 tons per hour,
 - (2) one (1) 36" gathering conveyor, identified as 5, with a capacity of 500 tons per

hour, **9-28-99**

- (3) one (1) 36" stockpile conveyor, identified as 6, with a capacity of 500 tons per hour,
- (4) one (1) 30" gathering conveyor, identified as 8, with a capacity of 450 tons per hour,
- (5) one (1) 30" stockpile conveyor, identified as 9, with a capacity of 450 tons per hour,
- (6) one (1) 24" gathering conveyor, identified as 10, with a capacity of 400 tons per hour,
- (7) one (1) 30" transfer conveyor, identified as 11, with a capacity of 450 tons per hour,
- (8) one (1) 24" gathering conveyor, identified as 12, with a capacity of 400 tons per hour,
- (9) one (1) 24" stockpile conveyor, identified as 14, with a capacity of 400 tons per hour,
- (10) one (1) 36" transfer conveyor, identified as 16, with a capacity of 600 tons per hour,
- (11) one (1) 36" transfer conveyor, identified as 17, with a capacity of 600 tons per hour,
- (12) one (1) 36" transfer conveyor, identified as 18, with a capacity of 600 tons per hour, and
- (13) one (1) 36" transfer conveyor, identified as 19, with a capacity of 600 tons per hour.

A.3 SSOA Applicability [326 IAC 2-9-1]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Source Specific Operating Agreement (SSOA).

SECTION B GENERAL CONSTRUCTION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.5 Modification to Permit [326 IAC 2]

Notwithstanding the Section B condition entitled ~~A~~Source Specific Operating Agreement Program, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Source Specific Operating Agreement Program [326 IAC 2-9]

This document shall also become a source specific operating agreement pursuant to 326 IAC 2-9-1 when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section.
 - (1) If the Affidavit of Construction verifies that the facilities covered in this Construction Permit were constructed as proposed in the application, then the facilities may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (2) If the Affidavit of Construction does not verify that the facilities covered in this Construction Permit were constructed as proposed in the application, then the Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section prior to beginning operation of the facilities.
- (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (c) Upon receipt of the Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section, the Permittee shall attach it to this document.

- 9-28-99
- (d) The operating agreement will be subject to annual operating permit fees pursuant to 326 IAC 2-9-7 (Sand and Gravel plants).

B.7 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.670 – 60.676, Subpart OOO, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION C SOURCE OPERATION CONDITIONS

9-28-99
Entire Source

C.1 Source Status [326 IAC 2-2] [40 CFR 52.21] [326 IAC 2-9]

- (a) The source annual throughput shall be less than three million one hundred thousand (3,100,00) tons per year.
- (b) This source does not emit particulate matter in excess of or equal to one hundred (100) tons per year excluding fugitive emissions.

C.2 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) PMP-s shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. IDEM, OAM may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

C.3 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the authorized individual as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAM within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

9-28-99

C.4 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAM, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

C.5 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAM, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAM shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the Authorized individual as defined by 326 IAC 2-1.1-1.

C.6 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.7 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity) monitor in a six (6) hour period.

C.8 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.9 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on March 30, 2000. The plan consists of:

- (a) Wet suppression from water trucks will be used to control emissions from stockpiles and roads as necessary in accordance with Sand and Gravel SSOA under 327 IAC 2-9-7.
- (b) The raw material will exhibit a moisture content of 3-4 percent which should inhibit the production of fugitive dust prior processing in the wet screen and the screw washers. After entering the various wash processes, the material will be sufficiently dampened to preclude excessive emissions. Only the outer crust of the stockpiles will become dry enough to present a potential dust problem. Water sprays will be used on the stockpiles as necessary to comply with applicable regulations. A water spray truck will be used to prevent excessive dust on the access road. After processing, the finished product will remain moist during the conveyor transit to the barge loading area.

Testing Requirements

C.10 Performance Testing [326 IAC 3-6] [326 IAC 2-1.1-11]

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAM.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

9-28-99
Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAM, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the Authorized individual as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

Record Keeping and Reporting Requirements

C.13 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) With the exception of performance tests conducted in accordance with Section C- Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.14 General Record Keeping Requirements [326 IAC 2-6.1-2]

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
- (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
- (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.
- (d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.15 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Semi-annual Compliance Monitoring Report. Any

9-28-99
deviation from the requirements and the date(s) of each deviation must be reported. The Compliance Monitoring Report shall include the certification by the authorized individual as defined by 326 IAC 2-1.1-1(1).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM on or before the date it is due.
- (d) Unless otherwise specified in this permit, any semi-annual report shall be submitted within thirty (30) days of the end of the reporting period. The reports do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
- (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) A malfunction as described in 326 IAC 1-6-2; or
 - (3) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.
 - (4) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

C.16 Annual Notification [326 IAC 2-9-8]

- (a) Annual notification shall be submitted to the Office of Air Management stating whether or not the source is in operation and in compliance with the terms and conditions contained in this Source Specific Operating Agreement.

- 9-28-99
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
 - (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Management
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

- (d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM on or before the date it is due.

SECTION D **EMISSIONS UNIT OPERATION CONDITIONS**

Emissions Unit Description:

- (a) one (1) truck dump hopper, identified as 1, with a capacity of 600 tons per hour,
- (b) one (1) wash screen (6' x 20' triple deck), identified as 3, with a capacity of 600 tons per hour,
- (c) one (1) semi-portable sand washing plant with 44" sand screws, identified as 4, with a capacity of 500 tons per hour,
- (d) one (1) 44" x 32' single screw fine material washer, identified as 7, with a capacity of 450 tons per hour,
- (e) one (1) 44" x 20' single screw coarse material washer, identified as 13, with a capacity of 400 tons per hour,
- (f) one (1) truck dump hopper, identified as 15, with a capacity of 600 tons per hour, and
- (g) one conveying operation consisting of the following conveyors:
 - (1) one (1) 36" screen feed conveyor, identified as 2, with a capacity of 600 tons per hour,
 - (2) one (1) 36" gathering conveyor, identified as 5, with a capacity of 500 tons per hour,
 - (3) one (1) 36" stockpile conveyor, identified as 6, with a capacity of 500 tons per hour,
 - (4) one (1) 30" gathering conveyor, identified as 8, with a capacity of 450 tons per hour,
 - (5) one (1) 30" stockpile conveyor, identified as 9, with a capacity of 450 tons per hour,
 - (6) one (1) 24" gathering conveyor, identified as 10, with a capacity of 400 tons per hour,
 - (7) one (1) 30" transfer conveyor, identified as 11, with a capacity of 450 tons per hour,
 - (8) one (1) 24" gathering conveyor, identified as 12, with a capacity of 400 tons per hour,
 - (9) one (1) 24" stockpile conveyor, identified as 14, with a capacity of 400 tons per hour,
 - (10) one (1) 36" transfer conveyor, identified as 16, with a capacity of 600 tons per hour,

9-28-99

- (11) one (1) 36" transfer conveyor, identified as 17, with a capacity of 600 tons per hour,
- (12) one (1) 36" transfer conveyor, identified as 18, with a capacity of 600 tons per hour, and
- (13) one (1) 36" transfer conveyor, identified as 19, with a capacity of 600 tons per hour.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards

D.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

The PM from the units described below shall not exceed the pound per hour emission rate established as E in the following formulas:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour, and} \\ P = \text{process weight rate in tons per hour}$$

screen, identified as 2: E = 71.2 lb/hr
conveying operation: E = 71.2 lb/hr
hopper, identified as 1: E = 71.2 lb/hr
hopper, identifies as 15: E = 71.2 lb/hr

D.2 Annual Throughput [326 IAC 2-9-7]

Pursuant to 326 IAC 2-9-7 (Sand and gravel plants), the source annual throughput shall be less than three million one hundred thousand (3,100,000) tons per year.

D.3 Number of Facilities [326 IAC 2-9-7]

Pursuant to 326 IAC 2-9-7 (Sand and gravel plants), the source shall utilize at most twelve (12) crushers, twenty-four (24) screens, and a conveying operation.

D.4 Opacity [326 IAC 2-9-7] [326 IAC 12] [40 CFR 60.670, Subpart OOO]

Pursuant to 326 IAC 2-9-7 (Sand and gravel plants) and New Source Performance Standards, 326 IAC 12 (40 CFR 60.670, Subpart OOO) "Standards of Performance for Nonmetallic Mineral Processing Plants", visible emissions shall comply with the following standards:

- (a) The visible emissions from the screening and conveying operations shall not exceed an average of ten (10%) opacity in twenty-four (24) consecutive readings in a six (6) minute period. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9.
- (b) The visible emissions from the crushing operation shall not exceed an average of fifteen percent (15%) opacity in twenty-four (24) consecutive readings in a six (6) minute period. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9.
- (c) These limits will also satisfy the requirements of 326 IAC 5-1 (Opacity Limitations).

D.5 Opacity [326 IAC 2-9-7]

9-28-99

The fugitive particulate matter (PM) emissions of this source shall be controlled by applying water on all storage piles and unpaved roadways on an as needed basis, such that the following visible emission conditions are met:

- (a) The visible emissions from any storage pile shall not exceed twenty percent (20%) in twenty-four (24) consecutive readings in a six (6) minute period. This limitation shall not apply during periods when application of control measures are ineffective or unreasonable due to sustained high wind speeds. The opacity shall be determined using 40 CFR 60, Appendix A, Method 9, except that the opacity shall be observed at approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.
- (b) The visible emissions from unpaved roadways shall not exceed an average instantaneous opacity of twenty percent (20%). Average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass. The three (3) opacity readings for each vehicle pass shall be taken as follows:
 - (1) The first reading shall be taken at the time of emissions generation.
 - (2) The second reading shall be taken five (5) seconds after the first.
 - (3) The third reading shall be taken five (5) seconds after the second reading, or ten (10) seconds after the first reading.

The three (3) readings shall be taken approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

Compliance Determination Requirements

D.6 Dust Suppression for Screening and Conveying Operations [326 2-9-7]

Pursuant to 326 IAC 2-9-7 (Sand and Gravel Plants), the screening and conveying operations shall use a wet process or continuous wet suppression system to comply with Conditions D.3 (a) and D.3 (b) of this operating agreement.

D.7 Particulate Matter [326 IAC 2-9-7]

Pursuant to 326 IAC 2-9-7 (Sand and Gravel Plants), all equipment that generates particulate matter (PM) emissions and any emission control devices shall be operated and maintained at all times in such a manner as to meet all of the requirements of this Source Specific Operating Agreement.

D.8 Testing Requirements [326 IAC 3-6][40 CFR 60.670, Subpart OOO]

Pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance opacity tests shall be performed for conveying facilities within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

- (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.

- 9-28-99
- (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
 - (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
 - (d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
 - (e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

Record Keeping and Reporting Requirements

D.9 Record Keeping Requirements [326 IAC 2-9-7]

Pursuant to 326 IAC 2-9-7 (Sand and Gravel Plants), the owner or operator shall prepare and maintain records of the source for the past twelve (12) months, based on a monthly rolling average. These records shall be maintained for a minimum period of five (5) years, and made available, upon request, to the Office of Air Management (OAM).

D.10 Reporting Requirements

Any exceedance of any requirement contained in this operating agreement shall be reported, in writing, within one (1) week of its occurrence.

Annual Notification & Certification Form
Source Specific Operating Agreement Program

This form should be used to comply with the notification and certification requirements under 326 IAC 2-9.

Company Name:	Bethlehem Sand & Gravel Co., LLC
Address:	Camp Creek Road, 47104
City:	Bethlehem
Phone #:	502-587-9507
Agreement #:	S 019-12114-00101

I hereby certify that the source identified above is still in operation and is in compliance with the requirements of the above mentioned Source Specific Operating Agreement.

Authorized Individual (typed):
Title:
Signature:
Date:

Mail to: Permit Administration & Development Section
Office Of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Bethlehem Sand & Gravel Co., LLC
1561 E. Washington Street
Louisville, Kentucky 40206

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that Bethlehem Sand & Gravel Co., LLC, Camp Creek Road, Bethlehem, Indiana, 47104, has constructed the screening and conveying operation for sand and gravel in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on March 30, 2000 and as permitted pursuant to **Source Specific Operating Agreement No. S-019-12114, Plant ID No. 019-00101** issued on _____

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana
on this _____ day of _____, 20 _____.

My Commission expires: _____

Signature

Name (typed or printed)

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a New Source Construction and Source Specific Operating Agreement (SSOA)

Source Background and Description

Source Name: Bethlehem Sand & Gravel Co., LLC
Source Location: Camp Creek Road, Bethlehem, IN 47104
County: Clark
SIC Code: 1442
Operation Permit No.: S 019-12114-00101
Permit Reviewer: D. Harper

The Office of Air Management (OAM) has reviewed an application from Bethlehem Sand & Gravel Co. relating to the operation of a sand and gravel operation with an annual throughput of less than three million one hundred thousand (3,100,000) tons per year.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units and pollution control devices:

- (a) one (1) truck dump hopper, identified as 1, with a capacity of 600 tons per hour,
- (b) one (1) wash screen (6' x 20' triple deck), identified as 3, with a capacity of 600 tons per hour,
- (c) one (1) semi-portable sand washing plant with 44" sand screws, identified as 4, with a capacity of 500 tons per hour,
- (d) one (1) 44" x 32' single screw fine material washer, identified as 7, with a capacity of 450 tons per hour,
- (e) one (1) 44" x 20' single screw coarse material washer, identified as 13, with a capacity of 400 tons per hour,
- (f) one (1) truck dump hopper, identified as 15, with a capacity of 600 tons per hour, and
- (g) one conveying operation consisting of the following conveyors:
 - (1) one (1) 36" screen feed conveyor, identified as 2, with a capacity of 600 tons per hour,
 - (2) one (1) 36" gathering conveyor, identified as 5, with a capacity of 500 tons per hour,
 - (3) one (1) 36" stockpile conveyor, identified as 6, with a capacity of 500 tons per hour,

- 1 / 22 / 99
- (4) one (1) 30" gathering conveyor, identified as 8, with a capacity of 450 tons per hour,
 - (5) one (1) 30" stockpile conveyor, identified as 9, with a capacity of 450 tons per hour,
 - (6) one (1) 24" gathering conveyor, identified as 10, with a capacity of 400 tons per hour,
 - (7) one (1) 30" transfer conveyor, identified as 11, with a capacity of 450 tons per hour,
 - (8) one (1) 24" gathering conveyor, identified as 12, with a capacity of 400 tons per hour,
 - (9) one (1) 24" stockpile conveyor, identified as 14, with a capacity of 400 tons per hour,
 - (10) one (1) 36" transfer conveyor, identified as 16, with a capacity of 600 tons per hour,
 - (11) one (1) 36" transfer conveyor, identified as 17, with a capacity of 600 tons per hour,
 - (12) one (1) 36" transfer conveyor, identified as 18, with a capacity of 600 tons per hour, and
 - (13) one (1) 36" transfer conveyor, identified as 19, with a capacity of 600 tons per hour.

New Emission Units and Pollution Control Equipment

There are no new facilities proposed at this source during this review process.

Existing Approvals

The source has no previous approvals.

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete application for the purposes of this review was received on March 30, 2000.

Emission Calculations

1 / 22 / 99

See Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA.

Pollutant	Potential To Emit (tons/year)
PM	109.9 ¹
PM-10	52.3 ^{2,3}
SO ₂	0.0
VOC	0.0
CO	0.0
NO _x	0.0

¹PM emissions include fugitive emissions

²PM-10 emissions are calculated by dividing the PM emission by 2.1 (approximately 47.5% of the PM).

³PM-10 emissions include fugitive emissions

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM-10 is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-1.

County Attainment Status

The source is located in Clark County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	moderate nonattainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Clark County has been designated as moderate nonattainment for ozone.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	19.5
PM-10	9.3
SO ₂	0.0
VOC	0.0
CO	0.0
NO _x	0.0

1 / 22 / 99

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This new source has concurrently applied on March 30, 2000 for a Source Specific Operating Agreement (SSOA) under Option 3 of 326 IAC 2-9-8(b). Therefore, this source will be issued an SSOA pursuant to 326 2-9-8(b)(3).

Federal Rule Applicability

- (a) This sand and gravel plant is subject to the New Source Performance Standard, 326 IAC 12, 40 CFR 60.670 through 60.676, Subpart OOO. This rule requires the particulate emissions from the screening and conveying operations to be limited to ten percent (10%) or less.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-9-7 (SSOA: Sand and Gravel Plants)

The facilities and processes of this source shall be granted the Source Specific Operating Agreement pursuant to 326 IAC 2-9-7 provided that:

- (a) The sand and gravel operation shall have no more than twelve (12) crushers, twenty-four (24) screens, and one (1) conveying operation.
- (b) The sand and gravel operation annual throughput shall be less than three million one hundred thousand (3,100,000) tons per year.
- (c) The source shall keep annual throughput records of the sand and gravel operation at the site on a calendar year basis. These records shall be maintained for a minimum period of five (5) years, and made available upon request of the Office of Air Management (OAM).
- (d) Wet process or continuous wet suppression shall be used.
- (e) All equipment that generate particulate matter (PM) emissions and any associated control devices shall be operated and maintained at all times of plant operation, in such a manner, as to meet all of the requirements of this Source Specific Operating Agreement.
- (f) The visible emissions from the screening and conveying operation shall not exceed an average of ten percent (10%) opacity in twenty-four (24) consecutive readings in a six (6) minute period. Compliance with this limitation shall be determined by 40 CFR 60, Appendix A, Method 9.
- (g) The fugitive particulate matter (PM) emissions of this source shall be controlled by applying water on all storage piles and unpaved roadways on an as needed basis, such that the following visible emission conditions are met:
 - (1) The visible emissions from any storage pile shall not exceed twenty percent (20%) in twenty-four (24) consecutive readings in a six (6) minute period. This

limitation shall not apply during periods when application of control measures are ineffective or unreasonable due to sustained high wind speeds. The opacity shall be determined using 40 CFR 60, Appendix A, Method 9, except that the opacity shall be observed at approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

- (2) The visible emissions from unpaved roadways shall not exceed an average instantaneous opacity of twenty percent (20%). Average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass. The three (3) opacity readings for each vehicle pass shall be taken as follows:
 - (A) The first reading shall be taken at the time of emission generation.
 - (B) The second reading shall be taken five (5) seconds after the first.
 - (C) The third reading shall be taken five (5) seconds after the second reading, or ten (10) seconds after the first reading.

The three (3) readings shall be taken approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

- (h) The fugitive particulate emissions at the sand and gravel operation shall not escape beyond the property lines or boundaries of the source property, right of way, or easement on which the source is located pursuant to 326 IAC 6-4.
- (i) The source shall provide an annual notice to the commissioner, stating that the source is in operation, and certifying that its operations are in compliance with the requirements of this Source Specific Operating Agreement. The above annual notice shall be submitted to:

**Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than January 30 of each year, with the annual notice being submitted in the format attached.

- (j) Any exceedance of any requirement contained in this operating agreement shall be reported, in writing, within one (1) week of its occurrence. Said report shall include information on the actions taken to correct the exceedance, including measures to reduce emissions, in order to comply with the established limits. If an exceedance is the result of a malfunction, then the provisions of 326 IAC 1-6 apply.
- (k) Pursuant to 326 IAC 2-9-1(i), the owner or operator is hereby notified that this operating agreement does not relieve the permittee of the responsibility to comply with the provisions of any applicable federal, state, or local rules, or any New Source Performance Standards (NSPS), 40 CFR Part 60, or National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61.

State Rule Applicability - Individual Facilities / 22 / 99

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the screening operation, conveying operation and the hoppers shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

$$E = 55.0 (600)^{0.11} - 40 \\ E = 71.2 \text{ lb/hr}$$

screen, identified as 2: $E = 71.2 \text{ lb/hr}$
conveying operation: $E = 71.2 \text{ lb/hr}$
hopper, identified as 1: $E = 71.2 \text{ lb/hr}$
hopper, identified as 15: $E = 71.2 \text{ lb/hr}$
total: $E = 284.8 \text{ lb/hr}$

Since this PM emission limit of 284.8 lb/hr (1247.4 ton/yr) is greater than the PSD threshold level of 250 tons per year for this stationary plant, the allowable PM emissions shall be limited to 56.8 pounds per hour (249 ton/yr) for the operations listed above. Since this PM emission limit of 56.8 pounds per hour is greater than the potential PM emission rate after control of 4.2 pounds per hour, the sand and gravel operation complies with this rule.

The wet suppression system shall be in operation at all times the screening and conveying process is in operation, in order to comply with this limit.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

Fugitive particulate matter emissions shall be controlled according to the plan submitted on March 30, 2000. The plan consists of as follows:

- (a) Wet suppression from water trucks will be used to control emissions from stockpiles and roads as necessary in accordance with Sand and Gravel SSOA under 327 IAC 2-9-7.
- (b) The raw material will exhibit a moisture content of 3-4 percent which should inhibit the production of fugitive dust prior processing in the wet screen and the screw washers. After entering the various wash processes, the material will be sufficiently dampened to preclude excessive emissions. Only the outer crust of the stockpiles will become dry enough to present a potential dust problem. Water sprays will be used on the stockpiles as necessary to comply with applicable regulations. A water spray truck will be used to prevent excessive dust on the access road. After processing, the finished product will remain moist during the conveyor transit to the barge loading area.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

None of the listed air toxics will be emitted from this source.

Conclusion

1/22/99

The construction and operation of this sand and gravel operation shall be subject to the conditions of the attached proposed **New Source Construction and Source Specific Operating Agreement S 019-12114-00101**.

Appendix A: Emission Calculations

Sand Processing

Company Name: Bethlehem Sand & Gravel Co. ,LLC
Address City IN Zip: Creek Road, Bethlehem, IN 47104
CP: 019-12114
Plt ID: 019-00101
Reviewer: D. Harper
Date: 3/30/00

emissions before controls

		(TSP)				
Storage		** see page 2 **			0.93	tons/yr
Transporting		** see page 3 **			2.23	tons/yr
Loading & Unloading	1,200 ton/hr x	0.0016 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	8.50	tons/yr
Crushing (primary)	0 ton/hr x	0.0007 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00	tons/yr
Crushing (secondary) ¹	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00	tons/yr
Crushing (tertiary) ¹	0 ton/hr x	0.00504 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	0.00	tons/yr
Screening ¹	600 ton/hr x	0.0315 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	82.78	tons/yr
Conveyor Transfer ¹	1,200 ton/hr x	0.00294 lb/ton	/ 2000 lb/ton x	8760 hr/yr =	15.45	tons/yr
Total emissions before controls:					109.89	tons/yr

AP-42 Ch.11.2.3 (Fourth edition, no update)
 AP-42 Ch. 13.2.2 (Supplement E, 9/98)
 AP-42 Ch.13.2.4 (Fifth edition, 1/95) calculated
 AP-42 Ch.11.19.2 (Fifth edition, 1/95)
 AP-42 Ch.11.19.2 (Fifth edition, 1/95)
 AP-42 Ch.11.19.2 (Fifth edition, 1/95)
 AP-42 Ch.11.19.2 (Fifth edition, 1/95)

See AP-42 (1/95) Table 11.19.2-2, notes c and d before using these emission factors (PM10 emission factors differ from those listed above).

¹PM10 emission factors are calculated by dividing the TSP emission factors by 2.1 (approximately 47.5% of the TSP factors).

** emissions after controls **

Storage	0.93 tons/yr x	10% emitted after controls =	0.09 tons/yr
Transporting	2.23 tons/yr x	50% emitted after controls =	1.11 tons/yr
Loading & Unloading	8.50 tons/yr x	100% emitted after controls =	8.50 tons/yr
Crushing (primary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	82.78 tons/yr x	10% emitted after controls =	8.28 tons/yr
Conveying	15.45 tons/yr x	10% emitted after controls =	1.55 tons/yr
Total emissions after controls:			19.53 tons/yr

** fugitive vs. nonfugitive **

Storage	0.93 tons/yr x	10% emitted after controls =	0.09 tons/yr
Transporting	2.23 tons/yr x	50% emitted after controls =	1.11 tons/yr
Loading / Unloading	8.50 tons/yr x	100% emitted after controls =	8.50 tons/yr
Total fugitive emissions:			9.70 tons/yr
Crushing (primary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (secondary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Crushing (tertiary)	0.00 tons/yr x	10% emitted after controls =	0.00 tons/yr
Screening	82.78 tons/yr x	10% emitted after controls =	8.28 tons/yr
Conveying:	15.45 tons/yr x	10% emitted after controls =	1.55 tons/yr
Total nonfugitive emissions:			9.82 tons/yr

** storage **

Storage emissions, which result from wind erosion, are determined by the following calculations:

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

= 1.85 lb/acre/day

where s = 1.6 % 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

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

= 0.93 tons/yr

where sc = 75 ,000 tons storage capacity

Note: This calculation is from AP-42, Fourth edition. The calculations were not included in subsequent editions of AP-42, therefore, it is up to the permit reviewers discretion to use this calculation.

**** unpaved roads ****

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 13.2.2 (Supplement E, 9/98).

Two methods are provided for calculating emissions. The first does not consider natural mitigation due to precipitation.

$$\begin{aligned}
 &1 \text{ trip/hr} \times \\
 &0.23 \text{ mile/trip} \times \\
 &2 \text{ (round trip)} \times \\
 &8760 \text{ hr/yr} = \qquad \qquad \qquad 4029.6 \text{ miles per year}
 \end{aligned}$$

Method 1:

$$\begin{aligned}
 E_f &= k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M/0.2)^c] \\
 &= \mathbf{1.11} \text{ lb/mile}
 \end{aligned}$$

where k = 2.6 (particle size multiplier for PM-10) (k= 10 for PM-30 or TSP)
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 3 tons average vehicle weight
M = 0.3 surface material moisture content, % (default is 0.2 for dry conditions)

$$\frac{1.11 \text{ lb/mi} \times 4029.6 \text{ mi/yr}}{2000 \text{ lb/ton}} = \mathbf{2.23} \text{ tons/yr}$$

This method has a lower quality rating than Method 1.

Method 2:

$$\begin{aligned}
 E_f &= \{k \cdot [(s/12)^{0.8}] \cdot [(W/3)^b] / [(M_{dry}/0.2)^c]\} \cdot [(365-p)/365] \\
 &= \mathbf{3.45} \text{ lb/mile}
 \end{aligned}$$

where k = 2.6 (particle size multiplier for PM-10) (k=10 for PM-30 or TSP)
s = 4.8 mean % silt content of unpaved roads
b = 0.4 Constant for PM-10 (b = 0.5 for PM-30 or TSP)
c = 0.3 Constant for PM-10 (c = 0.4 for PM-30 or TSP)
W = 38 tons average vehicle weight
M_{dry} = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)
p = number of days with at least 0.254mm of precipitation (See Figure 13.2.2-1)

$$\frac{3.45 \text{ lb/mi} \times 4029.6 \text{ mi/yr}}{2000 \text{ lb/ton}} = \mathbf{6.95} \text{ tons/yr}$$

Note: The permit reviewer can choose the method he/she wants to use. See AP-42 13.2.2 for further information. Cell J13 should reference G100 if Method 1 is used or N100 if Method 2 is used.

**** aggregate handling ****

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on 8760 hours of use and AP-42, Ch 13.2.4 (Fifth edition, 1/95).

$$\begin{aligned}
 E_f &= k \cdot (0.0032)^U \cdot (U/5)^{1.3} / (M/2)^{1.4} \\
 &= 0.0016 \text{ lb/ton}
 \end{aligned}$$

where k = 0.74 (particle size multiplier)
U = 10 mile/hr mean wind speed
M = 5 % material moisture content