

**NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT**

Proposed Approval of Construction and Operation Permit
for **Innovative Crushing and Aggregate, Inc.**
in **Clark County**

CP-019-9531, Plt ID-019-05170

Notice is hereby given that the above company located at James Road, Clarksville, Indiana 47129, has made application to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a permit to construct and operate a portable asphalt, concrete, limestone and brick crushing/recycling plant with a maximum capacity of 200 tons per hour when processing asphalt, limestone, or brick and a maximum capacity of 150 tons per hour when processing concrete with wet suppression as air pollution control. Based on 8,760 hours of operation per year, the particulate matter (PM) allowable emissions are 91.66 tons per year.

Notice is hereby given that there will be a period of 30 days from the date of publication of this notice during which any interested person may comment on why this proposed permit should or should not be issued. Appropriate comments should be related to air quality issues, interpretation of the applicable state and federal rules, calculations made, technical issues, or the effect that the operation of this facility would have on any aggrieved individuals. A copy of the application and staff review is available for examination at the **Charleston Clark Co Public Library, 51 Clark Road, Charleston, Indiana**. All comments, along with supporting documentation, should be submitted in writing to the IDEM, OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015. If appropriate adverse comments concerning the **air pollution impact** of this proposed source are received, together with a request for a public hearing, such a hearing may be held to give further consideration to this application.

Persons not wishing to comment at this time, but wishing to receive notice of future proceedings conducted related to this action, must submit a written request to the Office of Air Management (OAM), at the above address. All interested parties of record will receive a notice of the decision on this matter and will then have 15 days after receipt of the Notice of Decision to file a petition for administrative review. Procedures for filing such a petition will be enclosed with the Notice.

Questions should be directed to George Kunstek, OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or at 317/233-8396 or at 1-800-451-6027 ext. 3-8396.

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

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**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

Innovative Crushing and Aggregate, Inc.

is hereby authorized to construct

a portable asphalt, concrete, limestone and brick crushing/recycling plant with a maximum capacity of 200 tons per hour when processing asphalt, limestone, or brick and a maximum capacity of 150 tons per hour when processing concrete. This plant shall consist of loading and unloading, crushing, screening, conveying, storage, and transporting operations. This plant shall utilize the following equipment:

- (a) Powerscreen power grid separator,
- (b) Seco feed hopper with feeder - 5 cubic yard,
- (c) Grassan 1010 City Crusher,
- (d) Grassan side discharge conveyor with Dean magnet 48"x40',
- (e) Grassan screen feed conveyor 36"x60',
- (f) Tyler Ty Rocket CS 3-surface incline screen,
- (g) Grassan radial stacker 30"x75',
- (h) Grassan radial stacker 30"x75',
- (i) Berkshire radial stacker,
- (j) Powerscreen scalper & hopper 10 cu yd,
- (k) Powerscreen screen feed conveyor 48"x50',
- (l) Powerscreen turbochiftan 2 deck screen,
- (m) Powerscreen conveyor 24"x50',
- (n) Powerscreen conveyor 24"x50',
- (o) Powerscreen conveyor 24"x50', and
- (p) Powerscreen radial stacker 30"x80'.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-019-9531-05170	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That 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.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(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.
5. That notwithstanding Construction Condition No. 6, 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).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) 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, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (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) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).

- (e) Pursuant to 326 IAC 2-1-4, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

NSPS Reporting Requirement

- 7. That pursuant to the New Source Performance Standards (NSPS), Part 60.670 through 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

- 8. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

- 1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- 2. That the permittee shall 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.

Preventive Maintenance Plan

- 3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.

- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this processing plant is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That 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 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Malfunction Condition

7. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Opacity Limitations

- 8. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
 - (a) Visible emissions shall not exceed an average of 30% opacity in 24 consecutive readings.
 - (b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Compliance with these opacity limits shall satisfy the requirements of 326 IAC 6-1-2, in the absence of any particulate matter compliance stack tests.

Fugitive Dust Emissions

- 9. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

Fugitive Dust Emissions

- 10. That pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted in the application received on March 4, 1998. This includes applying water on storage piles, unpaved roadways, loading and unloading operations on an "as-needed" basis such that the following visible emission conditions are met:

- (a) Visible emissions from storage piles shall not exceed twenty percent (20%) in twenty four (24) consecutive readings in a six (6) minute period. This limitation may not apply during periods when application of control measures are ineffective or unreasonable due to sustained very 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) 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:
 - (i) The first will be taken at the time of emission generation.
 - (ii) The second will be taken five (5) seconds later.
 - (iii) The third will be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken 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. Each reading shall be taken approximately four (4) feet above the surface of the unpaved roadway.

- (c) Visible emissions from loading and unloading operations shall not exceed an average instantaneous opacity of twenty percent (20%). The average instantaneous opacity shall be the average of three (3) opacity readings taken five (5) seconds, ten (10) seconds, and fifteen (15) seconds after the end of one (1) material loading or unloading operation. The three (3) readings shall be taken 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 with these opacity limitations shall also meet the requirements of 326 IAC 5-1.

Nonfugitive Emissions

- 11. That nonfugitive emissions from crushing, screening, and conveying operations shall be controlled by utilizing a continuous wet suppression system in order to meet the requirements of the NSPS, Subpart OOO, and 326 IAC 5-1.

NSPS

12. That whenever this plant is processing limestone, it shall comply with the New Source Performance Standards, 326 IAC 12 (40 CFR 60.670 through 60.676, Subpart OOO) "Standards of Performance for Nonmetallic Mineral Processing Plants". This rule requires particulate emissions from the screening and conveying operations to be limited to 10 percent opacity or less and particulate emissions from the crushing operations to be limited to 15 percent opacity or less. Compliance with these opacity limits shall also satisfy the requirements of 326 IAC 5-1.

NSPS Testing Requirement

13. That opacity tests to determine compliance with the NSPS, Subpart OOO shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up pursuant to 40 CFR 60.675(c) and 40 CFR 60.11. 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.
 - (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 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) 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.

Portable Source

14. That this plant has been approved for operation in all areas of the State except for severe nonattainment areas (Lake and Porter Counties) based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2 and Emission Offset requirements in 326 IAC 2-3. However, a 30 day advance notice of relocation must be given to the Office of Air Management and a new "Relocation Site Approval" letter must be obtained before relocating.
15. That a valid operation permit consists of this document and an "Initial Site Approval" letter or any subsequent "Relocation Site Approval" letter specifying the current location.
16. That if this portable plant is planning to operate in one of the following areas, it is the responsibility of the owner/operator of this portable plant to contact the corresponding air pollution local agency for possible additional permitting requirements;

- (q) Madison County -- Anderson Office of Air Management (AOAM) at 317/646-9835,
- (b) Evansville and four (4) miles outside of the city limit -- Evansville Environmental Protection Agency (EPA) at 812/426-5597,
- (c) City of Gary -- Division of Air Pollution Control at 219/882-3007,
- (d) City of Hammond -- Hammond Department of Environmental Management (HDEM) at 219/853-6306,
- (e) Marion County -- Indianapolis Environmental Resource Management Division (ERMD) at 317/327-2287,
- (f) St. Joseph County -- St. Joseph County Environmental Health at 219/235-9775, and
- (g) Vigo County -- Vigo County Air Pollution Control Department at 812/462-3433.

Open Burning

17. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____

LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19 ____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/19 ____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO₂, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

**Indiana Department of Environmental Management
Office of Air Management**

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Innovative Crushing and Aggregate, Inc.
Source Location (initial):	Sames Road, Clarksville, Indiana 47129
County (initial):	Clark County
Construction Permit No.:	CP-019-9531-05170
SIC Code:	1422
Permit Reviewer:	George Kunstek

The Office of Air Management (OAM) has reviewed an application from Innovative Crushing and Aggregate, Inc. relating to the construction and operation of a portable asphalt, concrete, limestone and brick crushing/recycling plant with a maximum capacity of 200 tons per hour when processing asphalt, limestone, or brick and a maximum capacity of 150 tons per hour when processing concrete. This plant consists of the following equipment:

- (a) Powerscreen power grid separator,
- (b) Seco feed hopper with feeder - 5cubic yard,
- (c) Grassan 1010 City Crusher,
- (d) Grassan side discharge conveyor with Dean magnet 48"x40',
- (e) Grassan screen feed conveyor 36"x60',
- (f) Tyler Ty Rocket CS 3-surface incline screen,
- (g) Grassan radial stacker 30"x75',
- (h) Grassan radial stacker 30"x75',
- (i) Berkshire radial stacker,
- (j) Powerscreen scalper & hopper 10 cu yd,
- (k) Powerscreen screen feed conveyor 48"x50',
- (l) Powerscreen turbochietan 2 deck screen,
- (m) Powerscreen conveyor 24"x50',
- (n) Powerscreen conveyor 24"x50',
- (o) Powerscreen conveyor 24"x50', and
- (p) Powerscreen radial stacker 30"x80'.

Recommendation

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

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

An application for the purposes of this review was received on March 4, 1998.

Emissions Calculations

See Appendixes A, B, C and D (Emissions Calculation Spreadsheets) for 16 pages of detailed calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	91.66	91.66
Particulate Matter (PM10)	60.86	60.86
Sulfur Dioxide (SO ₂)	0.0	0.0
Volatile Organic Compounds (VOC)	0.0	0.0
Carbon Monoxide (CO)	0.0	0.0
Nitrogen Oxides (NO _x)	0.0	0.0
Single Hazardous Air Pollutant (HAP)	0.0	0.0
Combination of HAPs	0.0	0.0

- (a) The potential emissions are equivalent to the allowable emissions. Therefore, the allowable emissions are used for the permitting determination.
- (b) Allowable emissions (as defined in the Indiana Rule) of PM are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Clark County has been classified as attainment or unclassifiable for particulate matter (PM). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Portable Source

- (a) Initial Location
This is a portable source, and its initial location will be on Sames Road, Clarksville, Indiana 47129.

- (b) **PSD and Emission Offset Requirements**
The emissions from this portable source were reviewed both under the requirements of the Prevention of Significant Deterioration (PSD), 326 IAC 2-2, 40 CFR 52.21, and Emission Offset, 326 IAC 2-3.
- (c) **Fugitive Emissions**
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

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/yr)
PM	11.93
PM10	5.68
SO ₂	0.0
VOC	0.0
CO	0.0
NO _x	0.0
Single HAP	0.0
Combination HAPs	0.0

This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater, no nonattainment pollutant is emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2 and 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

- (a) This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:
- (i) each criteria pollutant is less than 100 tons per year,
 - (ii) each single hazardous air pollutant (HAP) is less than 10 tons per year, and
 - (iii) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

- (b) **Fugitive Emissions**
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM10 emissions are not counted toward determination of Part 70 Permit applicability.

Federal Rule Applicability

40 CFR Part 60, Subpart OOO

Whenever this plant is processing limestone, the plant is subject to the New Source Performance Standard 326 IAC 12 and 40 CFR 60.670 through 60.676, Subpart OOO. This rule requires the particulate emissions from:

- (a) the crushing operations to be limited to 15 percent opacity or less, and
- (b) the screening and conveying operations to be limited to 10 percent or less. (enclosed is a copy of this federal rule).

State Rule Applicability

326 IAC 4 (Open Burning)

This rule requires that the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

326 IAC 5-1 Visible Emission Limitations

This rule requires that visible emissions meet the following, unless otherwise specified in this permit:

- (a) Visible emissions shall not exceed an average of 30% opacity in 24 consecutive readings.
- (b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-1-2 (Nonattainment Area Particulate Limitations)

This rule, which would otherwise require that the particulate matter (PM) emissions from the crushing, screening, and conveying operations to not exceed 0.03 grains per dry standard cubic feet (gr/dscf), **does not apply** since the source is not totally enclosed. Thus it is not practical to measure emissions therefrom.

326 IAC 6-1-11.1 (Lake County Fugitive Particulate Matter Requirements)

This rule **does not apply** since the source will not be allowed to construct and operate within Lake County due to more stringent requirements.

326 IAC 6-4 (Fugitive Dust Emissions)

This rule requires the source not to generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

This rule requires a fugitive dust plan to be submitted. The plan, which was submitted in the application received on March 4, 1998, was reviewed, and approved. The source shall comply with all dust abatement measures contained therein, which includes, but not limited to, applying water on storage piles, unpaved roadways, material loading and unloading operations on an "as-needed" basis such that the following visible emission conditions are met:

- (a) Visible emissions from storage piles shall not exceed twenty percent (20%) in twenty four (24) consecutive readings in a six (6) minute period. This limitation may not apply during periods when application of control measures are ineffective or unreasonable due to sustained very 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) 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:
- (i) The first will be taken at the time of emission generation.
 - (ii) The second will be taken five (5) seconds later.
 - (iii) The third will be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken 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. Each reading shall be taken approximately four (4) feet above the surface of the unpaved roadway.

- (c) Visible emissions from the material loading and unloading operations shall not exceed an average instantaneous opacity of twenty percent (20%). The average instantaneous opacity shall be the average of three (3) opacity readings taken five (5) seconds, ten (10) seconds, and fifteen (15) seconds after the end of one (1) material loading or unloading operation. The three (3) readings shall be taken 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 with these opacity limitations shall also meet the requirements of 326 IAC 5-1.

326 IAC 2-7 (Part 70 Rules) and 326 IAC 2-8 (FESOP Rules)

These rules do not apply since the potential to emit (PTE) nonfugitive PM-10 does not exceed the 100 tons per year Part 70 threshold.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants 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 these listed air toxics will be emitted from this proposed construction.

Conclusion

The construction of this portable asphalt, concrete, limestone and brick crushing/recycling plant will be subject to the conditions of the attached proposed **Construction Permit No. CP-019-9531-05170**.

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

Innovative Crushing and Aggregate, Inc.
2412 Millers Lane
Louisville, KY 40216

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 _____ Innovative Crushing and Aggregate, Inc.,
(Title)
3. By virtue of my position with _____ Innovative Crushing and Aggregate, Inc., I have personal knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____ Innovative Crushing and Aggregate, Inc. .
4. I hereby certify that Innovative Crushing and Aggregate, Inc., Sames Road , Clarksville, Indiana, 47129, has constructed the portable asphalt, concrete, limestone and brick crushing/recycling plant with a maximum capacity of 200 tons per hour when processing asphalt, limestone, or brick and a maximum capacity of 150 tons per hour when processing concrete in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on March 4, 1998 and as permitted pursuant to **Construction Permit No. CP-019-9531, Plant ID No. 019-05170** 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 _____, 19 _____ .

My Commission expires: _____

Signature

Name (typed or printed)

APPENDIX A

**Indiana Department of Environmental Management
Office of Air Management**

CALCULATIONS

Source Information

Source Name: Innovative Crushing & Aggrgate, Inc.
 Source Location: James Road, Clarksville, IN 47129
 County: Clark
 Operation Permit No.: CP-019-9531-05170
 SIC Code: 1422

**Limestone, Asphalt or Brick Processing 200 TPH
Potential Emissions Before Controls - PM**

	ton/yr (TPY)
Storage	0.05
Trans	152.67
Loading and Unloading	5.08
Primary Crusher (1)	0.61
Screening - Primary	27.59
Screening - Secondary	65.31
<u>Conveying (10 transfer points)</u>	<u>3.86</u>
Total Emissions Before Controls	255.17

Potential Emissions After Controls

			After controls	TPY
Storage	0.05		10% emitted	0.01
Trans	68.75		50% emitted	76.34
Loading and Unloading	2.45		50% emitted	2.54
Primary Crusher	0.29		10% emitted	0.06
Screening (2)	44.24		10% emitted	9.29
<u>Conveying (10 transfer points)</u>	1.84		10 % emitted	<u>0.39</u>
Total Emissions After Controls				88.63

PM Storage

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

Where s = 1.6% silt
 p = 125 days of rain
 f = 15% wind > 12 mph

$$E_f = 1.7(1.6/1.5)(365 - 125)/(235)(15/15)$$

$$E_f = 1.7(1.067)(240)/235$$

Calculations (continued)

$$E_f = 1.85 \text{ lb/acre/day}$$

$$E_p = (E_f)(sc)(40\text{ft}^3/\text{ton})/(2000 \text{ lb/ton})(43560 \text{ ft}^2/\text{acre})/(25 \text{ ft})(365 \text{ day/yr})$$
$$E_p = (4000 \text{ ton})(40 \text{ ft}^3/\text{ton}) = 160000 \text{ ft}^3$$
$$160000\text{ft}^3/25 \text{ ft} = 6400 \text{ ft}^2$$
$$6400 \text{ ft}^2/43560 \text{ ft}^2/\text{acre} = 0.1469 \text{ acre}$$

$$(1.85 \text{ lb/acre/day})(0.1469 \text{ acre})(365 \text{ day/yr}) = 99 \text{ lb/yr}$$
$$(99 \text{ lb/yr})/(2000 \text{ ton/lb}) = 0.05 \text{ ton/yr}$$

PM transportation

Tri-axle Trucks (14 wheelers)

$$(9.0 \text{ trip/hr})(0.25 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 39420 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.8$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 23$ ton avg wgt

$w = 14$ wheel

$$E_f = (0.8)(5.9)(9.6/12)(10/30)(23/3)0.7(14/4)0.5(365 - 125)/(365)$$

$$E_f = 6.37 \text{ lb/mile}$$

$$(6.37 \text{ lb/mile})(39420 \text{ mile/yr})/(2000 \text{ lb/ton}) = 125.6 \text{ ton/yr}$$

Front End Loaders (4 wheelers)

$$(10.0 \text{ trip/hr})(0.1 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 17520 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.8$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 20$ ton avg wgt

$w = 4$ wheel

$$E_f = (0.8)(5.9)(9.6/12)(10/30)(20/3)0.7(4/4)0.5(365 - 125)/(365)$$

$$E_f = 3.09 \text{ lb/mile}$$

$$(3.09 \text{ lb/mile})(17520 \text{ mile/yr})/(2000 \text{ lb/ton}) = 27.07 \text{ ton/yr}$$

$$\text{PM transportation Total} = 125.6 \text{ ton/yr} + 27.07 \text{ ton/yr} = 152.67 \text{ ton/yr}$$

PM Loading and Unloading

$$E_f = (k(0.0032)(U/5)1.3)/((M/2)1.4)$$

Calculations (continued)

Where: $K = 0.74$

$U = 10$ mph wind speed

$M = 2\%$ MaH H₂O content

$$E_f = (0.74)(0.0032)(10/5)^{1.3} / ((2/2)^{1.4})$$

$$E_f = ((0.74)(0.0032)(10/5)^{1.3}) / 1 = 0.0058 \text{ lb/ton}$$

$$(200 \text{ ton/hr})(0.0058 \text{ lb/ton}) = 1.16 \text{ lb/hr}$$

$$(1.16 \text{ lb/hr})(8760 \text{ hr/yr}) = 10161.6 \text{ lb/yr}$$

$$(10161.6 \text{ lb/yr}) / (2000 \text{ lb/ton}) = 5.08 \text{ ton/yr}$$

PM Primary Crusher (1)

$$\text{AP-42} \quad 0.0007 \text{ lb/ton}$$

$$(200 \text{ ton/hr})(0.0007 \text{ lb/ton}) = 0.14 \text{ lb/hr}$$

$$(0.14 \text{ lb/hr})(8760 \text{ hr/yr}) = 1226.4 \text{ lb/yr}$$

$$(1226.4 \text{ lb/yr}) / (2000 \text{ lb/ton}) = 0.61 \text{ ton/yr}$$

PM Primary Screening

$$\text{Ap-42} \quad (\text{PM}_{10})(2.1) \quad \text{PM} = (0.015)(2.1) = 0.315 \text{ lb/ton}$$

$$(200 \text{ ton/hr})(0.315 \text{ lb/ton}) = 63 \text{ lb/hr}$$

$$(63 \text{ lb/hr})(8760 \text{ hr/yr}) = 55188 \text{ lb/yr}$$

$$(55188 \text{ lb/yr}) / (2000 \text{ lb/ton}) = 27.59 \text{ ton/yr}$$

PM Secondary Screening

$$\text{AP-42} \quad (\text{PM}_{-10})(2.1) = \text{PM} \quad (0.071)(2.1) = 0.1491 \text{ lb/ton}$$

$$(100 \text{ ton/hr})(0.1491 \text{ lb/ton}) = 14.91 \text{ lb/hr}$$

$$(14.91 \text{ lb/hr})(8760 \text{ hr/yr}) = 130612 \text{ lb/yr}$$

$$(130612 \text{ lb/yr}) / (2000 \text{ lb/ton}) = 65.31 \text{ ton/yr}$$

PM Conveying

$$\text{AP-42} \quad (\text{PM}_{10})(2.1) = 2.1 \quad (0.0014)(2.1) = 0.00294 \text{ lb/ton}$$

Use conservative factor of 1.5 for 10 transfer points, then

$$200 \text{ ton/hr}(1.5) = 300 \text{ ton/hr (uncontrolled PM)}$$

$$(300 \text{ ton/hr})(0.00294 \text{ lb/ton}) = 0.882 \text{ lb/hr}$$

$$(0.882 \text{ lb/hr})(8760 \text{ hr/yr}) = 7726.2 \text{ lb/yr}$$

$$(7726.2 \text{ lb/yr}) / (2000 \text{ lb/ton}) = 3.86 \text{ ton/yr}$$

Calculations (continued)

**Limestone, Asphalt or Brick Processing 200 TPH
 Potential Emissions Before Controls - PM10**

Storage	0.05
Trans	68.75
Loading and Unloading	2.45
Primary Crusher (1)	0.29
Screening - Primary	13.14
Screening - Secondary	31.10
<u>Conveying (10 transfer points)</u>	<u>1.84</u>
Total Emissions Before Controls	117.62

Potential Emissions After Controls

		After controls	TPY
Storage	0.05	10% emitted	0.01
Trans	68.75	50% emitted	34.38
Loading and Unloading	2.45	50% emitted	1.22
Primary Crusher	0.29	10% emitted	0.03
Screening (2)	44.24	10% emitted	4.42
<u>Conveying (10 transfer points)</u>	<u>1.84</u>	<u>10 % emitted</u>	<u>0.18</u>
Total Emissions After Controls			40.24

PM10 Storage

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

Where s = 1.6% silt
 p = 125 days of rain
 f = 15% wind > 12 mph

$$E_f = 1.7(1.6/1.5)(365 - 125)/(235)(15/15)$$

$$E_f = 1.7(1.067)(240)/235$$

$$E_f = 1.85 \text{ 16/acre/day}$$

$$E_p = (E_f)(sc)(40\text{ft}^3/\text{ton})/(2000 \text{ lb}/\text{ton})(43560 \text{ ft}^2/\text{acre})/(25 \text{ ft})(365 \text{ day}/\text{yr})$$

$$E_p = (4000 \text{ ton})(40 \text{ ft}^3/\text{ton}) = 160000 \text{ ft}^3$$

$$160000\text{ft}^3/25 \text{ ft} = 6400 \text{ ft}^2$$

$$6400 \text{ ft}^2/43560 \text{ ft}^2/\text{acre} = 0.1469 \text{ acre}$$

$$(1.85 \text{ lb}/\text{acre}/\text{day})(0.1469 \text{ acre})(365 \text{ day}/\text{yr}) = 99 \text{ lb}/\text{yr}$$

$$(99 \text{ lb}/\text{yr})/(2000 \text{ ton}/\text{lb}) = 0.05 \text{ ton}/\text{yr}$$

PM10 Transportation

Tri-axle Trucks (14 wheelers)

$$(9.0 \text{ trip}/\text{hr})(0.25 \text{ mile})/\text{trip})(2 \text{ round trip})(8760 \text{ hr}/\text{yr}) = 39420 \text{ mile}/\text{yr}$$

Calculations (continued)

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.36$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 23$ ton avg wgt

$w = 14$ wheel

$$E_f = (0.36)(5.9)(9.6/12)(10/30)(23/3)0.7(14/4)0.5(365 - 125)/(365)$$

$$E_f = 2.87 \text{ lb/mile}$$

$$(2.87 \text{ lb/mile})(39420 \text{ mile/yr})/(2000 \text{ lb/ton}) = 56.57 \text{ ton/yr}$$

Front End Loaders (4 wheelers)

$$(10.0 \text{ trip/hr})(0.1 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 17520 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.36$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 20$ ton avg wgt

$w = 4$ wheel

$$E_f = (0.36)(5.9)(9.6/12)(10/30)(20/3)0.7(4/4)0.5(365 - 125)/(365)$$

$$E_f = 1.39 \text{ lb/mile}$$

$$(1.39 \text{ lb/mile})(17520 \text{ mile/yr})/(2000 \text{ lb/ton}) = 12.18 \text{ ton/yr}$$

$$\text{PM}_{10} \text{ transportation Total} = 56.57 \text{ ton/yr} + 12.18 \text{ ton/yr} = 68.75 \text{ ton/yr}$$

PM10 Loading and Unloading

$$E_f = (k(0.0032)(U/5)1.3)/((M/2)1.4)$$

Where: $K = 0.35$

$U = 10$ mph wind speed

$M = 2\%$ MaH H₂O content

$$E_f = (0.35(0.0032)(10/5)1.3)/((2/2)1.4)$$

$$E_f = ((0.35)(0.0032)(10/5)1.3)/1 = 0.0028 \text{ lb/ton}$$

$$(200 \text{ ton/hr})(0.0028 \text{ lb/ton}) = 0.56 \text{ lb/hr}$$

$$(0.56 \text{ lb/hr})(8760 \text{ hr/yr}) = 4905.6 \text{ lb/yr}$$

$$(4905.6 \text{ lb/yr})/(2000 \text{ lb/ton}) = 2.45 \text{ ton/yr}$$

PM10 Primary Crusher (1)

AP-42 0.00033 lb/ton

$$(200 \text{ ton/hr})(0.00033 \text{ lb/ton}) = 0.066 \text{ lb/hr}$$

Calculations (continued)

$$(0.066 \text{ lb/hr})(8760 \text{ hr/yr}) = 578.2 \text{ lb/yr}$$

$$(578.2 \text{ lb/yr})/(2000 \text{ lb/ton}) = 0.29 \text{ ton/yr}$$

PM10 Primary Screening

$$\text{Ap-42 PM10} = 0.015 \text{ lb/ton}$$

$$(200 \text{ ton/hr})(0.015 \text{ lb/ton}) = 3.00 \text{ lb/hr}$$

$$(3.00 \text{ lb/hr})(8760 \text{ hr/yr}) = 26280 \text{ lb/yr}$$

$$(26280 \text{ lb/yr})/(2000 \text{ lb/ton}) = 13.14 \text{ ton/yr}$$

PM10 Secondary Screening

$$\text{AP-42 PM-10} = 0.0071 \text{ lb/ton}$$

$$(100 \text{ ton/hr})(0.0071 \text{ lb/ton}) = 0.71 \text{ lb/hr}$$

$$(0.71 \text{ lb/hr})(8760 \text{ hr/yr}) = 6219.6 \text{ lb/yr}$$

$$(6219.6 \text{ lb/yr})/(2000 \text{ lb/ton}) = 3.11 \text{ ton/yr}$$

PM10 Conveying

$$\text{AP-42 PM10} = 0.0014 \text{ lb/ton}$$

Use conservative factor of 1.5 for 10 transfer points, then

$$200 \text{ ton/hr}(1.5) = 300 \text{ ton/hr (uncontrolled PM)}$$

$$(300 \text{ ton/hr})(0.0014 \text{ lb/ton}) = 0.42 \text{ lb/hr}$$

$$(0.42 \text{ lb/hr})(8760 \text{ hr/yr}) = 3679.2 \text{ lb/yr}$$

$$(3679.2 \text{ lb/yr})/(2000 \text{ lb/ton}) = 1.84 \text{ ton/yr}$$

Concrete Processing 150 TPH
Potential Emissions Before Controls - PM

	ton/yr (TPY)
Storage	0.01
Trans	152.67
Loading and Unloading	3.81
Primary Crusher (1)	0.46
Screening - Primary	20.70
Screening - Secondary	48.97
<u>Conveying (10 transfer points)</u>	<u>2.39</u>
Total Emissions Before Controls	229.57

Potential Emissions After Controls

		After controls	TPY
Storage	0.05	10% emitted	0.00
Trans	68.75	50% emitted	76.34
Loading and Unloading	2.45	50% emitted	1.91
Primary Crusher	0.29	10% emitted	0.05
Screening (2)	44.24	10% emitted	6.97
<u>Conveying (10 transfer points)</u>	1.84	10 % emitted	<u>0.29</u>
Total Emissions After Controls			85.56
PM Storage			

Calculations (continued)

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

Where $s = 1.6\%$ silt
 $p = 125$ days of rain
 $f = 15\%$ wind > 12 mph

$$E_f = 1.7(1.6/1.5)(365 - 125)/(235)(15/15)$$

$$E_f = 1.7(1.067)(240)/235$$

$$E_f = 1.85 \text{ 16/acre/day}$$

$$E_p = (E_f)(sc)(40\text{ft}^3/\text{ton})/(2000 \text{ lb/ton})(43560 \text{ ft}^2/\text{acre})/(25 \text{ ft})(365 \text{ day/yr})$$

$$E_p = (1000 \text{ ton})(40 \text{ ft}^3/\text{ton}) = 40000 \text{ ft}^3$$

$$40000\text{ft}^3/25 \text{ ft} = 1600 \text{ ft}^2$$

$$1600 \text{ ft}^2/43560 \text{ ft}^2/\text{acre} = 0.0367 \text{ acre}$$

$$(1.85 \text{ lb/acre/day})(0.0367 \text{ acre})(365 \text{ day/yr}) = 24.78 \text{ lb/yr}$$

$$(24.78 \text{ lb/yr})/(2000 \text{ ton/lb}) = 0.01 \text{ ton/yr}$$

PM transportation

Tri-axle Trucks (14 wheelers)

$$(9.0 \text{ trip/hr})(0.25 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 39420 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.8$

$$s = 9.6\%$$
 silt

$$p = 125$$
 day of rain

$$S = 10$$
 mph

$$W = 23$$
 ton avg wgt

$$w = 14$$
 wheel

$$E_f = (0.8)(5.9)(9.6/12)(10/30)(23/3)0.7(14/4)0.5(365 - 125)/(365)$$

$$E_f = 6.37 \text{ lb/mile}$$

$$(6.37 \text{ lb/mile})(39420 \text{ mile/yr})/(2000 \text{ lb/ton}) = 125.6 \text{ ton/yr}$$

Front End Loaders (4 wheelers)

$$(10.0 \text{ trip/hr})(0.1 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 17520 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.8$

$$s = 9.6\%$$
 silt

$$p = 125$$
 day of rain

$$S = 10$$
 mph

$$W = 20$$
 ton avg wgt

$$w = 4$$
 wheel

$$E_f = (0.8)(5.9)(9.6/12)(10/30)(20/3)0.7(4/4)0.5(365 - 125)/(365)$$

$$E_f = 3.09 \text{ lb/mile}$$

Calculations (continued)

$$(3.09 \text{ lb/mile})(17520 \text{ mile/yr})/(2000 \text{ lb/ton}) = 27.07 \text{ ton/yr}$$

$$\text{PM transportation Total} = 125.6 \text{ ton/yr} + 27.07 \text{ ton/yr} = 152.67 \text{ ton/yr}$$

PM Loading and Unloading

$$E_f = (k(0.0032)(U/5)^{1.3})/((M/2)^{1.4})$$

Where: $K = 0.74$

$U = 10$ mph wind speed

$M = 2\%$ MaH H₂O content

$$E_f = (0.74(0.0032)(10/5)^{1.3})/((2/2)^{1.4})$$

$$E_f = ((0.74)(0.0032)(10/5)^{1.3})/1 = 0.0058 \text{ lb/ton}$$

$$(150 \text{ ton/hr})(0.0058 \text{ lb/ton}) = 0.87 \text{ lb/hr}$$

$$(0.87 \text{ lb/hr})(8760 \text{ hr/yr}) = 7621.2 \text{ lb/yr}$$

$$(7621.2 \text{ lb/yr})/(2000 \text{ lb/ton}) = 3.81 \text{ ton/yr}$$

PM Primary Crusher (1)

$$\text{AP-42 PM} = 0.0007 \text{ lb/ton}$$

$$(150 \text{ ton/hr})(0.0007 \text{ lb/ton}) = 0.105 \text{ lb/hr}$$

$$(0.105 \text{ lb/hr})(8760 \text{ hr/yr}) = 919.8 \text{ lb/yr}$$

$$(919.8 \text{ lb/yr})/(2000 \text{ lb/ton}) = 0.46 \text{ ton/yr}$$

PM Primary Screening

$$\text{Ap-42 PM}_{10}(2.1) \text{ PM} = (0.015)(2.1) = 0.315 \text{ lb/ton}$$

$$(150 \text{ ton/hr})(0.315 \text{ lb/ton}) = 4.73 \text{ lb/hr}$$

$$(4.73 \text{ lb/hr})(8760 \text{ hr/yr}) = 41391 \text{ lb/yr}$$

$$(41391 \text{ lb/yr})/(2000 \text{ lb/ton}) = 20.70 \text{ ton/yr}$$

PM Secondary Screening

$$\text{AP-42 (PM-10)}(2.1) = \text{PM} (0.071)(2.1) = 0.1491 \text{ lb/ton}$$

$$(75 \text{ ton/hr})(0.1491 \text{ lb/ton}) = 11.18 \text{ lb/hr}$$

$$(11.18 \text{ lb/hr})(8760 \text{ hr/yr}) = 97936.8 \text{ lb/yr}$$

$$(97936.8 \text{ lb/yr})/(2000 \text{ lb/ton}) = 48.97 \text{ ton/yr}$$

PM Conveying

$$\text{AP-42 (PM}_{10}) (2.1) = 2.1 (0.0014)(2.1) = 0.00294 \text{ lb/ton}$$

Use conservative factor of 1.5 for 10 transfer points, then

$$150 \text{ ton/hr}(1.5) = 225 \text{ ton/hr (uncontrolled PM)}$$

$$(225 \text{ ton/hr})(0.00294 \text{ lb/ton}) = 0.66 \text{ lb/hr}$$

$$(0.66 \text{ lb/hr})(8760 \text{ hr/yr}) = 5781.6 \text{ lb/yr}$$

$$(5781.6 \text{ lb/yr})/(2000 \text{ lb/ton}) = 2.89 \text{ ton/yr}$$

Calculations (continued)

**Concrete Processing 150 TPH
 Potential Emissions Before Controls - PM10**

	ton/yr (TPY)
Storage	0.01
Trans	68.75
Loading and Unloading	1.84
Primary Crusher (1)	0.22
Screening - Primary	9.86
Screening - Secondary	23.35
<u>Conveying (10 transfer points)</u>	<u>1.38</u>
Total Emissions Before Controls	105.41

Potential Emissions After Controls

		After controls	TPY
Storage	0.05	10% emitted	0.00
Trans	68.75	50% emitted	34.38
Loading and Unloading	2.45	50% emitted	0.92
Primary Crusher	0.29	10% emitted	0.02
Screening (2)	44.24	10% emitted	3.32
<u>Conveying (10 transfer points)</u>	<u>1.84</u>	<u>10 % emitted</u>	<u>0.14</u>
Total Emissions After Controls			38.78

PM10 Storage

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

Where s = 1.6% silt
 p = 125 days of rain
 f = 15% wind > 12 mph

$$E_f = 1.7(1.6/1.5)(365 - 125)/(235)(15/15)$$

$$E_f = 1.7(1.067)(240)/235$$

$$E_f = 1.85 \text{ 16/acre/day}$$

$$E_p = (E_f)(sc)(40\text{ft}^3/\text{ton})/(2000 \text{ lb}/\text{ton})(43560 \text{ ft}^2/\text{acre})/(25 \text{ ft})(365 \text{ day}/\text{yr})$$

$$E_p = (1000 \text{ ton})(40 \text{ ft}^3/\text{ton}) = 40000 \text{ ft}^3$$

$$40000\text{ft}^3/25 \text{ ft} = 1600 \text{ ft}^2$$

$$1600 \text{ ft}^2/43560 \text{ ft}^2/\text{acre} = 0.0367 \text{ acre}$$

$$(1.85 \text{ lb}/\text{acre}/\text{day})(0.0367 \text{ acre})(365 \text{ day}/\text{yr}) = 24.78 \text{ lb}/\text{yr}$$

$$(24.78 \text{ lb}/\text{yr})/(2000 \text{ ton}/\text{lb}) = 0.01 \text{ ton}/\text{yr}$$

Calculations (continued)

PM10 Transportation

Tri-axle Trucks (14 wheelers)

$$(9.0 \text{ trip/hr})(0.25 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 39420 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.36$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 23$ ton avg wgt

$w = 14$ wheel

$$E_f = (0.36)(5.9)(9.6/12)(10/30)(23/3)0.7(14/4)0.5(365 - 125)/(365)$$

$$E_f = 2.87 \text{ lb/mile}$$

$$(2.87 \text{ lb/mile})(39420 \text{ mile/yr})/(2000 \text{ lb/ton}) = 56.57 \text{ ton/yr}$$

Front End Loaders (4 wheelers)

$$(10.0 \text{ trip/hr})(0.1 \text{ mile/trip})(2 \text{ round trip})(8760 \text{ hr/yr}) = 17520 \text{ mile/yr}$$

$$E_f = (K)(5.9)(s/12)(5/30)(W/3)0.7(w/4)0.5(365-p)/(365)$$

where: $k = 0.36$

$s = 9.6\%$ silt

$p = 125$ day of rain

$S = 10$ mph

$W = 20$ ton avg wgt

$w = 4$ wheel

$$E_f = (0.36)(5.9)(9.6/12)(10/30)(20/3)0.7(4/4)0.5(365 - 125)/(365)$$

$$E_f = 1.39 \text{ lb/mile}$$

$$(1.39 \text{ lb/mile})(17520 \text{ mile/yr})/(2000 \text{ lb/ton}) = 12.18 \text{ ton/yr}$$

$$\text{PM10 transportation Total} = 56.57 \text{ ton/yr} + 12.18 \text{ ton/yr} = 68.75 \text{ ton/yr}$$

PM10 Loading and Unloading

$$E_f = (k(0.0032)(U/5)1.3)/((M/2)1.4)$$

Where: $K = 0.35$

$U = 10$ mph wind speed

$M = 2\%$ MaH H₂O content

$$E_f = (0.35(0.0032)(10/5)1.3)/((2/2)1.4)$$

$$E_f = ((0.35)(0.0032)(10/5)1.3)/1 = 0.0028 \text{ lb/ton}$$

$$(150 \text{ ton/hr})(0.0028 \text{ lb/ton}) = 0.42 \text{ lb/ton}$$

$$(0.42 \text{ lb/hr})(8760 \text{ hr/yr}) = 3679.2 \text{ lb/yr}$$

$$(3679.2 \text{ lb/yr})/(2000 \text{ lb/ton}) = 1.84 \text{ ton/yr}$$

Calculations (continued)

PM10 Primary Crusher (1)

$$\begin{aligned} \text{AP-42} & \quad 0.00033 \text{ lb/ton} \\ (150 \text{ ton/hr})(0.00033 \text{ lb/ton}) & = 0.0495 \text{ lb/hr} \\ (0.0495 \text{ lb/hr})(8760 \text{ hr/yr}) & = 433.62 \text{ lb/yr} \\ (433.62 \text{ lb/yr})/(2000 \text{ lb/ton}) & = 0.22 \text{ ton/yr} \end{aligned}$$

PM10 Primary Screening

$$\begin{aligned} \text{Ap-42} \quad \text{PM10} & = 0.015 \text{ lb/ton} \\ (150 \text{ ton/hr})(0.015 \text{ lb/ton}) & = 2.25 \text{ lb/hr} \\ (2.25 \text{ lb/hr})(8760 \text{ hr/yr}) & = 19710 \text{ lb/yr} \\ (19710 \text{ lb/yr})(2000 \text{ lb/ton}) & = 9.86 \text{ ton/yr} \end{aligned}$$

PM10 Secondary Screening

$$\begin{aligned} \text{AP-42} \quad \text{PM-10} & = 0.0071 \text{ lb/ton} \\ (75 \text{ ton/hr})(0.0071 \text{ lb/ton}) & = 0.533 \text{ lb/hr} \\ (0.533 \text{ lb/hr})(8760 \text{ hr/yr}) & = 4669.8 \text{ lb/yr} \\ (4669.8 \text{ lb/yr})/(2000 \text{ lb/ton}) & = 2.33 \text{ ton/yr} \end{aligned}$$

PM10 Conveying

$$\begin{aligned} \text{AP-42} \quad \text{PM10} & = 0.0014 \text{ lb/ton} \\ \text{Use conservative factor of 1.5 for 10 transfer points, then} \\ (150 \text{ ton/hr})(1.5) & = 225 \text{ ton/hr (uncontrolled PM)} \\ \\ (225 \text{ ton/hr})(0.0014 \text{ lb/ton}) & = 0.315 \text{ lb/hr} \\ (0.315 \text{ lb/hr})(8760 \text{ hr/yr}) & = 2759.4 \\ (2759.4)/(2000 \text{ lb/ton}) & = 1.38 \text{ ton/yr} \end{aligned}$$

Concrete Processing 150 TPH
 Potential Emissions Before Controls - PM

	ton/yr (TPY)
Storage	0.01
Trans	152.67
Loading and Unloading	3.81
Primary Crusher (1)	0.46
Screening - Primary	20.70
Screening - Secondary	48.97
<u>Conveying (10 transfer points)</u>	<u>2.39</u>
<u>Total Emissions Before Controls</u>	<u>229.57</u>

Potential Emissions After Controls

		After controls	TPY
Storage	0.05	10% emitted	0.00
Trans	68.75	50% emitted	76.34
Loading and Unloading	2.45	50% emitted	1.91
Primary Crusher	0.29	10% emitted	0.05
Screening (2)	44.24	10% emitted	6.97
<u>Conveying (10 transfer points)</u>	<u>1.84</u>	<u>10 % emitted</u>	<u>0.29</u>

Calculations (continued)

Total Emissions After Controls

85.56

Actual Particulate Matter (PM)

Typical Calculations

$$\frac{(2400 \text{ ft}^3)(60 \text{ min})(0.020 \text{ gr PM})(\text{ lb })}{(\text{ min })(\text{ hr })(\text{ ft}^3)(7000 \text{ gr})} = \frac{0.41 \text{ lb PM}}{\text{ hr}}$$

$$\frac{(0.41 \text{ lb PM})(8760 \text{ hr})(\text{ ton })}{(\text{ hr })(\text{ yr })(2000 \text{ lb})} = \frac{1.80 \text{ ton PM}}{\text{ yr}}$$

Potential to Emit (PTE) Particulate Matter (PM)

Typical Calculations

$$X(0.01) = \frac{(0.41 \text{ lb PM})}{(\text{ hr })} - X = \frac{(0.41 \text{ lb PM})(\text{ 1 })}{(\text{ hr })(0.01)} = \frac{41 \text{ lb PM}}{\text{ hr}}$$

$$\frac{(41 \text{ lb PM})(8760 \text{ hr})(\text{ ton })}{(\text{ hr })(\text{ yr })(2000 \text{ lb})} = \frac{180 \text{ ton PM}}{\text{ yr}}$$

Particulate Matter (PM)

Stack ID	Operation	Flow (acfm)	Concentration (gr/ft ³)	Actual (lb/hr)	Actual (ton/yr)	PTE (lb/hr)	PTE (ton/yr)
DC-6	Coal System	2400	0.020	0.41	1.80	41	180
DC-1	Coal System	2200	0.020	0.38	1.65	38	165
DC-7	Coal System	2400	0.020	0.41	1.80	41	180
DC-5	Inbound Raw Materials	2400	0.020	0.41	1.80	41	180
BV-AB	Inbound Raw Materials	1000	0.020	0.17	0.75	17	75
BV-CD	Inbound Raw Materials	1000	0.020	0.17	0.75	17	75
BV-1	Blending System	1000	0.020	0.17	0.75	17	75
BV-2	Blending System	1000	0.020	0.17	0.75	17	75
DC-4	Blending System	800	0.020	0.14	0.60	14	60
BV-3	Packaging and Loadout	1000	0.020	0.17	0.75	17	75
BV-4	Packaging and Loadout	900	0.020	0.15	0.68	15	68
DC-3	Packaging and Loadout	1000	0.020	0.17	0.75	17	75
DC-2	Packaging and Loadout	2400	0.020	0.41	1.80	41	180
Total				3.33	14.6	333	1460

Calculations (continued)

Potential To Emit (PTE) = 333 lb PM/hr

$$\frac{(333 \text{ lb PM})(8760 \text{ hr})(\frac{\text{ton}}{2000 \text{ lb}})}{(\text{hr})(\text{yr})} = \frac{1460 \text{ ton PM}}{\text{yr}}$$

Allowable Particulate Matter (PM)

326 IAC 6-3-2(c) Process Operations: particulate emission limitation

P = Process Weight Rate in tons per hour

$$P = \frac{70 \text{ ton}}{\text{hr}}$$

$$E = 55.0(P)^{0.11} - 40 = 55.0 (70)^{0.11} - 40 = 47.8 \text{ lb PM/hr}$$

$$\frac{(47.8 \text{ lb PM})(8760 \text{ hr})(\frac{\text{ton}}{2000 \text{ lb}})}{(\text{hr})(\text{yr})} = \frac{209 \text{ ton PM}}{\text{yr}}$$

Emission Summary

(lb/hr)

Total	SO ₂	NOx	CO	PM	VOC
Actual	0.00	0.00	0.00	3.33	0.00
PTE	0.00	0.00	0.00	333	0.00
Allowable	0.00	0.00	0.00	47.8	0.00

(ton/yr)

Total	SO ₂	NOx	CO	PM	VOC
Actual	0.00	0.00	0.00	14.6	0.00
PTE	0.00	0.00	0.00	1460	0.00
Allowable	0.00	0.00	0.00	209	0.00

Appendix D: PM-10 Emission Calculations

Concrete Processing

Company Name:	Innovative Crushing and Aggregate, Inc.
Plant Location (initial):	James Road, Clarksville, Indiana 47129
County (initial):	Clark County
Date Received:	March 4, 1998
Permit Reviewer:	George Kunstek
CP No.:	019-9531
Plt. ID No.:	019-05170

I. Potential Emissions Before Controls

Storage		** see page 2 **				0.05 tons/yr	AP-42 Ch.13.2.4
Transporting		** see page 3 **				107.94 tons/yr	AP-42 Ch.13.2.2
Loading & Unloading	150 tons/hr x	8760 hrs/yr x	0.0028 lb/ton	/ 2000 lb/ton		1.81 tons/yr	AP-42 Ch.11.2.3
Primary Crusher (1)	150 tons/hr x	8760 hrs/yr x	0.00033 lb/ton	/ 2000 lb/ton		0.22 tons/yr	AP-42 Ch.11
Primary Screening	150 tons/hr x	8760 hrs/yr x	0.015 lb/ton	/ 2000 lb/ton		9.86 tons/yr	AP-42 Ch.11
Secondary Screening	75 tons/hr x	8760 hrs/yr x	0.071 lb/ton	/ 2000 lb/ton		23.32 tons/yr	AP-42 Ch.11
Conveying (10 transfer pts.)	1,500 tons/hr x	8760 hrs/yr x	0.0014 lb/ton	/ 2000 lb/ton		9.20 tons/yr	AP-42 Ch.11
Total emissions before controls:						152.40 tons/yr	

II. Potential Emissions After Controls

Storage	0.05 tons/yr x	10% emitted after controls =	0.00 tons/yr
Transporting	107.94 tons/yr x	50% emitted after controls =	53.97 tons/yr
Loading & Unloading	1.81 tons/yr x	50% emitted after controls =	0.91 tons/yr
Primary Crusher (1)	0.22 tons/yr x	10% emitted after controls =	0.02 tons/yr
Primary Screening	9.86 tons/yr x	10% emitted after controls =	0.99 tons/yr
Secondary Screening	23.32 tons/yr x	10% emitted after controls =	2.33 tons/yr
Conveying (10 transfer pts.)	9.20 tons/yr x	10% emitted after controls =	0.92 tons/yr
Total emissions after controls:			59.14 tons/yr

Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, fugitive emissions are not counted toward determination of PSD applicability.

Crushing, screening, and conveying operations are considered nonfugitive. All other emissions are considered fugitive. Pursuant to PSD Rules, 326 IAC 2-2, emissions are as follows:

* * fugitive vs. nonfugitive * *

Storage	0.05 tons/yr x	10% emitted after controls =	0.00 tons/yr
Transporting	107.94 tons/yr x	50% emitted after controls =	53.97 tons/yr
Loading / Unloading	1.81 tons/yr x	50% emitted after controls =	0.91 tons/yr
<hr/>			
Total fugitive emissions:			54.88 tons/yr

Primary Crusher (1)	0.22 tons/yr x	10% emitted after controls =	0.02 tons/yr
Primary Screening	9.86 tons/yr x	10% emitted after controls =	0.99 tons/yr
Secondary Screening	23.32 tons/yr x	10% emitted after controls =	2.33 tons/yr
Conveying (10 transfer pts.)	9.20 tons/yr x	10% emitted after controls =	0.92 tons/yr
<hr/>			
Total nonfugitive emissions:			4.26 tons/yr

* * storage * *

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

$$E_f = 1.7 \cdot (s/1.5)^{0.5} \cdot (365-p) / 235 \cdot (f/15)$$

= 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

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

= 0.05 tons/yr

where sc = 4 ,000 tons storage capacity

** 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
 Since, the company did not submit the number of trips made per hour and the distance covered per trip, estimates were used.

A. Tri-axle trucks (14 wheelers)

$$9.0 \text{ trip/hr} \times 0.25 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 39420 \text{ miles per year}$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 2.90 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
- s = 9.6 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 10 miles/hr vehicle speed
- W = 23 tons average vehicle weight
- w = 14 wheels

$$\frac{2.90 \text{ lb/mi} \times 39420 \text{ mi/yr}}{2000 \text{ lb/ton}} = 57.15 \text{ tons/yr}$$

B. Front-end loaders (4 wheelers)

$$10.0 \text{ trip/hr} \times 0.1 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 17520 \text{ miles per year}$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 5.80 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
- s = 9.6 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 20 miles/hr vehicle speed
- W = 23 tons average vehicle weight
- w = 14 wheels

$$\frac{5.80 \text{ lb/mi} \times 17520 \text{ mi/yr}}{2000 \text{ lb/ton}} = 50.80 \text{ tons/yr}$$

TOTAL PM-10: 107.94 tons/yr

* * 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 11.2.3.

$$\begin{aligned} E_f &= k(0.0032)^k (U/5)^{1.3}/(M/2)^{1.4} \\ &= 0.0028 \text{ lb/ton} \end{aligned}$$

where k = 0.35 (particle size multiplier)
U = 10 mile/hr mean wind speed
M = 2 % material moisture content