CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT

BJ Services Company, U.S.A.
3151 Progress Blvd.
Corydon, Indiana 47112

is hereby authorized to construct

(1) a batch cement blending operation, consisting of the following equipment:

(a) one (1) dry product storage tank, constructed in February, 1996, with a maximum capacity of 2000 cubic feet, and a maximum throughput capacity of 25 tons per hour, used for storing fly ash and dry cement, with emissions from material transfer controlled by baghouse B;

(b) one (1) dry product batch blender, constructed in February, 1996, with a maximum capacity of 2000 cubic feet, and a maximum throughput capacity of 25 tons per hour, with emissions from material transfer controlled by baghouse B;

(c) one (1) truck loading station, constructed in February, 1996, with a maximum throughput capacity of 25 tons per hour, with emissions from material transfer controlled by baghouse B;

(d) one (1) compressor engine, constructed in February, 1996, with a maximum capacity of 75 horsepower.

(2) a sand storage and loading facility, consisting of two (2) new sand silos, constructed in July 1997, each with a maximum capacity of 3000 cubic feet.

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-061-9023-00021	
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.

7. 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 batch cement blending operation 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 40% 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.

   For emissions from intermittent sources, opacity shall be determined according to 326 IAC 5-1-4(a)(1)(F).

9. That pursuant to 326 IAC 6-3 (Process Operations), the baghouse shall be in operation at all times when batch cement blending process is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 35.43 pounds per hour.

Baghouse Operating Condition

10. That the baghouse shall be operated at all times when the batch cement blending process is in operation.

   (a) The Permittee shall take readings of the total static pressure drop across the baghouses, at least once per day. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 4 and 7 inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.

   (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

   (c) The gauge employed to take the pressure drop across the baghouses or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within $\pm$ 2% of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.

   (d) An inspection shall be performed each calendar quarter of the all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.

   (e) In the event that a bag's failure has been observed:

      (i) The affected compartments will be shut down immediately until the failed units have been replaced.

      (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

11. That visible emission notations of all exhaust to the atmosphere from the baghouse shall be performed once per working shift during normal daylight hours. A trained employee will record whether emissions are normal or abnormal.

    (a) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, 80% of the time, the process is in operation, not counting start up or shut down time.

    (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility’s specific condition prescribing visible emissions.

    (c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.

    (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

12. 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)].

Open Burning

13. 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:	BJ Services Company, U.S.A.
Source Location:	3151 Progress Blvd., Corydon, Indiana 47112
County:	Harrison
Construction Permit No.:	CP-061-9023-00021
SIC Code:	1389
Permit Reviewer:	Nisha Sizemore

The Office of Air Management (OAM) has reviewed an application from BJ Services Company, U.S.A. relating to the construction and operation of a batch cement blending operation, consisting of the following equipment:

(a) one (1) dry product storage tank, constructed in February, 1996, with a maximum capacity of 2000 cubic feet, and a maximum throughput capacity of 25 tons per hour, used for storing fly ash and dry cement, with emissions from material transfer controlled by baghouse B;

(b) one (1) dry product batch blender, constructed in February, 1996, with a maximum capacity of 2000 cubic feet, and a maximum throughput capacity of 25 tons per hour, with emissions from material transfer controlled by baghouse B;

(c) two (2) new sand silos, constructed in July 1997, each with a maximum capacity of 3000 cubic feet;

(d) one (1) truck loading station, constructed in February, 1996, with a maximum throughput capacity of 25 tons per hour, with emissions from material transfer controlled by baghouse B;

(e) one (1) compressor engine, constructed in February, 1996, with a maximum capacity of 75 horsepower.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
B	baghouse	18	0.5	470	ambient
E	compressor and engine	10	0.25	N/A	400
S1	sand silo #1	25	0.5	N/A	ambient
S2	sand silo #2	25	0.5	N/A	ambient

Enforcement Issue

IDEM is aware that this equipment has been constructed prior to receipt of the proper permit. 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:

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

A complete application for the purposes of this review was received on October 2, 1997.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (5 pages).

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)	155	48.2
Particulate Matter (PM10)	155	48.2
Sulfur Dioxide (SO_2)	0.70	0.70
Volatile Organic Compounds (VOC)	0.80	0.80
Carbon Monoxide (CO)	2.20	2.20
Nitrogen Oxides (NO_x)	10.2	10.2
Single Hazardous Air Pollutant (HAP)	0.01	0.01
Combination of HAPs	0.01	0.01

(a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3-2. See attached spreadsheets for detailed calculations.

(b) The potential emissions before control are less than the allowable emissions, therefore, the potential emissions before control are used for the permitting determination.

(c) Allowable emissions (as defined in the Indiana Rule) of particulate matter 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) Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Harrison County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Harrison County has been classified as attainment or unclassifiable for total suspended particulate (TSP) and PM10. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(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 (ton/yr)
PM	4.55
PM10	4.55
SO_2	0.70
VOC	0.80
CO	2.20
NO_x	10.2
Single HAP	0.01
Combination HAPs	0.01

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 and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

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 is the first air approval issued to this source.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.

State Rule Applicability

326 IAC 1-6-2 (Records; Notice of Malfunction)

Pursuant to this rule, the following conditions shall apply:

(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]

326 IAC 5-1-2 (Visible Emission Limitations)

Pursuant to this rule, 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 40% 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 6-3 (Process Operations)

Pursuant to this rule the baghouse shall be in operation at all times when batch cement blending process is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 35.43 pounds per hour.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to this rule 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)].

326 IAC 4-1 (Open Burning)

Pursuant to this rule 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.

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.

(a) This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

(b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this batch cement blending operation will be subject to the conditions of the attached proposed **Construction Permit No. CP-061-9023-00021.**

Indiana Department of Environmental Management
Office of Air Management

Addendum to the
Technical Support Document for New Construction and Operation

Source Name:	BJ Services Company, U.S.A.
Source Location:	3151 Progress Blvd., Corydon, Indiana 47112
County:	Harrison
Construction Permit No.:	CP-061-9023-00021
SIC Code:	1389
Permit Reviewer:	Nisha Sizemore

On November 19, 1997, the Office of Air Management (OAM) had a notice published in The Corydon Democrat, Corydon, Indiana, stating that BJ Services Company, U.S.A. had applied for a construction permit to construct and operate a batch cement blending operation with a baghouse for particulate control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On December 31, 1997, BJ Services submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

Comment #1

On page 1 of the permit, the batch cement blending facility should be listed as a separate operation from the sand storage and loading facility. The sand silos have not been constructed to date.

Response #1

The facility description on page 1 of the final permit has been changed as requested.

Comment #2

Operation condition number 8 of the permit requires that visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period. The intermittent nature of plant operations due to sporadic delivery and loading of dry bulk material means that the equipment ducted to the baghouse may not operate for the required duration (6 hours). This is also true for the sand silos at the site. Please revise condition number 8 to account for this intermittent operation.

Response #2

The OAM has added the following statement to the condition:

> For emissions from intermittent sources, opacity shall be determined according to 326 IAC 5-1-4(a)(1)(F).

Comment #3

Operation condition number 10 requires readings of the baghouse pressure drop. BJ Services suggests that this requirement be deleted from the permit. The requirement to inspect the baghouses each calendar quarter should be sufficient.

Response #3

Quarterly baghouse inspections are not sufficient to assure that the baghouse is operating properly every day that the plant is in operation. The OAM believes that pressure drop readings can be a good indication of proper baghouse operation.

Comment #4

Calculations for PM emissions utilized incorrect assumptions. The PM emissions calculations are based on emission factors for concrete batching. This facility is not a concrete batch plant. Rather, this facility involves only dry blending of cement and other dry additives (such as fly ash and gilsonite) in a closed system. Stockpiles are not present at this facility. The batch cement blending process and the sand storage/loading/unloading process are completely separate facilities. Sand is not utilized in the batch cement blending process. Therefore, the only factors which apply in to this process are pneumatic transfer of cement (0.27 lb PM/1000 pounds of material transferred) and sand transfer to an elevated bin (0.029 lb PM/1000 pounds of material transferred). Also, only 30% of the trucks used are 18-wheeled vehicles with a total weight of 40 tons outgoing (loaded), and 20 tons incoming (empty). The other 70% of the trucks are 10-wheeled vehicles which weigh 27.5 tons outgoing (loaded) and 17.5 tons incoming (empty). Please correct the emissions calculations based on this information.

Response #4

The OAM has recalculated the emissions from the source based on the above information. The total potential and allowable emissions are now as follows:

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	155	45.0
Particulate Matter (PM10)	155	45.0
Sulfur Dioxide (SO_2)	0.70	0.70
Volatile Organic Compounds (VOC)	0.80	0.80
Carbon Monoxide (CO)	2.20	2.20
Nitrogen Oxides (NO_x)	10.2	10.2
Single Hazardous Air Pollutant (HAP)	0.01	0.01
Combination of HAPs	0.01	0.01

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

Pollutant	Emissions (ton/yr)
PM	3.38
PM10	3.38
SO_2	0.70
VOC	0.80
CO	2.20
NO_x	10.2
Single HAP	0.01
Combination HAPs	0.01

The revised calculations do not require a change to any of the permit conditions.

Appendix A: Emission Calculations

Company Name:	BJ Services Company, U.S.A.
Plant Location:	Corydon, Indiana
County:	Harrison
Date Received:	October 2, 1997
Permit Reviewer:	Nisha Sizemore

** emissions before controls **

Transporting			** see page 3 **					1.08	tons/yr	AP-42 Ch.11.2.1
Aggregate Dropping	25	ton/hr x	0.0016	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	0.18	tons/yr	AP-42 Ch.11.2.3
Aggregate Transfer	25	ton/hr x	0.029	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	3.18	tons/yr	AP-42 Ch.11.12.2
Cement Transfer	25	ton/hr x	0.27	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	29.57	tons/yr	AP-42 Ch.11.12.2
Total Process (truck mix)	25	ton/hr x	0.1	lb/ton	/ 2000 lb/ton x	8760	hr/yr =	10.95	tons/yr	AP-42 Ch.11.12.2
Total emissions before controls:								44.95	tons/yr	

A construction permit is needed since potential emissions exceed 25 tons per year.

** emissions after controls **

Transporting	1.08	tons/yr x	100.0%	emitted after controls =	1.08	tons/yr
Aggregate Dropping	0.18	tons/yr x	100.0%	emitted after controls =	0.18	tons/yr
Aggregate Transfer	3.18	tons/yr x	100.0%	emitted after controls =	3.18	tons/yr
Cement Transfer	29.57	tons/yr x	0.5%	emitted after controls =	0.15	tons/yr
Total Process (truck mix)	10.95	tons/yr x	0.5%	emitted after controls =	0.05	tons/yr
Total emissions after controls:					4.64	tons/yr

* * fugitive vs. nonfugitive * *

Transporting	1.08	tons/yr x	100.0%	emitted after controls =	1.08 tons/yr
Aggregate Dropping	0.18	tons/yr x	100.0%	emitted after controls =	0.18 tons/yr
Total fugitive emissions:					1.26 tons/yr
Mixer Loading	10.95	tons/yr x	0.5%	emitted after controls =	0.05 tons/yr
Aggregate Transfer	3.18	tons/yr x	100.0%	emitted after controls =	3.18 tons/yr
Cement Transfer	29.57	tons/yr x	0.5%	emitted after controls =	0.15 tons/yr
Total nonfugitive emissions:					3.38 tons/yr

* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 11.2.1.

0.42 trip/hr x
0.1 mile/trip x
2 (round trip) x
8760 hr/yr = 730 miles per year

Ef = k*5.9*(s/12)*(S/30)*(W/3)^0.7*(w/4)^0.5*((365-p)/365)
= 2.96 lb/mile
where k = 0.8 (particle size multiplier)
s = 8.9 % silt content of unpaved roads
p = 125 days of rain greater than or equal to 0.01 inches
S = 5 miles/hr vehicle speed
W = 25 tons average vehicle weight
w = 12 wheels

$$\frac{2.96 \text{ lb/mi} \times 730 \text{ mi/yr}}{2000 \text{ lb/ton}} = 1.08 \text{ tons/yr}$$

* * aggregate handling * *

The following calculations determine the amount of emissions created by dropping of material, based on 8760 hours of use and AP-42, Ch 11.2.3.

Ef =	k*(0.0032)* (U/5)^1.3/(M/2)^1.4	
=	0.0016	lb/ton
where k =	0.74	(particle size multiplier)
U =	10	mile/hr mean wind speed
M =	5	% material moisture content

The following calculations determine compliance with 326 IAC 6-3-2 for process weight rates less than or equal to 30 tons per hour:

limit =	4.1	*	(25	^ 0.67)	=	35.43	lb/hr	
3.38	tons/yr x	2000	lb/ton /	8760	hr/yr =	0.77	lb/hr	(will comply)

Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating

Company Name: **BJ Services Company, U.S.A.**
City, Indiana: **Corydon, Indiana**
Reviewer: **Nisha Sizemore**
CP#: **061-9023**

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MM Btu/hr

0.5

	Pollutant									
Emission Factor in lb/MMBtu	Benzene 0.000933	Toluene 0.000409	Xylene 0.000285	Propylene 0.002580	1,3 Butadiene 0.000039	Formaldehyde 0.001180	Acetaldehyde 0.000767	Acrolein 0.000093	Napthalene 0.000085	Total HAPs
Potential Emission in tons/yr	0.0019	0.0009	0.0006	0.0054	0.0001	0.0025	0.0016	0.0002	0.0002	0.0133

Methodology

Emission Factors are from AP42 (Fifth edition, January 1995), Table 3.3-3

Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating

Company Name: **CP#:**
City, Indiana: **Plt ID:**
Reviewer:
Date:

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MM Btu/hr

0.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu	0.31	0.31	0.29	4.41	0.4	0.95
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

B. Emissions calculated based on output rating (hp)

Heat Input Capacity
Horsepower (hp)

Potential Throughput
hp-hr/yr

0.0	0.0

	Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

Methodology

Potential Througput (hp-hr/yr) = hp * 8760 hr/yr

Emission Factors are from AP42 (Fifth edition, January 1995), Table 3.3-2

Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

Emission (tons/yr) = [Potential Throughput (hp-/hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton) icdsl250.wk4 9/95

Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
Turbine (>250 and <600 HP)
Reciprocating

Company Name: **BJ Services Company, U.S.A.**
City, Indiana: **Corydon, Indiana**
Reviewer: **Nisha Sizemore**
CP#: **061-9023**

Emissions calculated based on output rating (hp)

Heat Input Capacity Horsepower (hp)	Potential Throughput hp-hr/yr
75.0	657000.0

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.7	0.7	0.7	10.2	0.8	2.2

Methodology

Potential Throughput (hp-hr/yr) = hp * 8760 hr/yr

Emission Factors are from AP42 (Fifth edition, January 1995), Table 3.3-2

Emission (tons/yr) = [Potential Throughput (hp-/hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)