

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Cargill Grain Division
500 East State Road 28
Tipton, Indiana 46072**

is hereby authorized to construct additional grain handling and drying facilities, consisting of the following:

- (a) Auxiliary Truck Dump #2 consisting of one (1) truck dump pit, three (3) drag conveyors, one (1) receiving leg, and one (1) dump shed. The entire unit operation shall have a maximum throughput of 15,000 bushels per hour. The unit operation will process soybeans, corn, and wheat. Baghouse #4 shall be constructed as part of this installation. The associated stack shall be a new stack, S-4.
- (b) Dryer # 2 which is a Zimmerman AP-4000 column dryer with perforated plate diameters of 0.0625 inches to 0.078 inches. The dryer is natural gas fired and shall have a maximum rating of 45 British thermal units per hour. The unit operation shall have a maximum throughput of 4,000 bushel per hour. The Dryer #2 shall exhaust through existing Baghouses #1,2,3 (CE-1, 2, 3) and existing stacks S-1, 2, 3.
- (c) Baghouse #4 and stack S-4 to control particulates from Auxiliary Truck Dump #2. The baghouse shall have a 14,000 square foot polyester fabric filter and operate at 14,000 actual cubic feet per minute.

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-159-8288-00005	
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 60.300 through 60.304, Subpart DD, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

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

Reports are to be sent to:

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

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

- 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 the Truck Auxiliary Dump #2 or Dryer #2 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.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for particulate matter (PM) emissions from Truck Auxiliary Dump #2 within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (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 stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
- (e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

Malfunction Condition

8. 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]

Annual Emission Reporting

9. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

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

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

10. 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 from Dryer #2 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.

Particulate Matter Limitations

11. That particulate matter (PM) emissions from Truck Auxiliary Dump #2 and Dryer #2 shall be considered in compliance provided that:
- (a) good housekeeping and equipment maintenance procedures are implemented.
- (b) emissions are minimized in receiving, handling, and shipping operations by appropriate methods. These may include but need not be limited to, dust collection systems, windscreens, baffles, restricted hopper openings, enclosed transfer points, flexible drop spouts and/or sleeves,
- (c) no visible accumulation of particulate matter beyond the plant property line, and
- (d) emissions do not violate 326 IAC 6-4 (Fugitive Dust Emissions).

Baghouse Operating Condition

12. That the Baghouse #4 shall be considered an integral part of the process and operated at all times when the Truck Auxiliary Dump #2 is in operation.
- (a) The Permittee shall take readings of the total static pressure drop across the baghouses, at least once per week. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouse shall be

maintained within the range of 3.0 and 6.0 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 baghouse 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) When the facility is operating, an inspection shall be performed each calendar quarter of the all the baghouse. 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

14. That visible emission notations of all exhaust to the atmosphere from Baghouses #1, 2, 3, and 4 shall be performed once per week. 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

15. 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) though (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

16. 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.

Emergency Reduction Plans

17. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

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

within 180 calendar days from the issuance date of this permit.

(c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(g) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

New Source Performance Standards

18. Pursuant to 40 CFR 60.300 through 304, on and after the date on which the performance test required to be conducted under 40 CFR 60.8 is completed, Cargill shall not cause to be discharged into the atmosphere from the Truck Auxiliary Dump #2 any process emission which:
 - (1) Contains particulate matter in excess of 0.023 grains per dry standard cubic meter (ca. 0.01 grains per dry standard cubic foot).
 - (2) Exhibits greater than 0 percent opacity.

19. On and after the 60th day of achieving the maximum production rate at which the Auxiliary Truck Dump #2 will be operated, but no later than 180 days after initial startup, Cargill shall not cause to be discharged into the atmosphere any fugitive emission from:
 - (1) Any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than 5 percent opacity.
 - (2) Any grain handling operation which exhibits greater than 0 percent opacity.
 - (3) Any truck loading station that exhibits greater than 10 percent opacity.

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____
REV 3/96 FAX NUMBER - 317 233-5967 *SEE REVERSE

PAGE 1 OF 2

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:

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

Cargill Grain Division
500 East State Road 28
Tipton, Indiana 46072

Affidavit of Construction

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

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)
4. I hereby certify that Cargill Grain Division, 500 East State Road 28, Tipton, Indiana, 46072, has constructed the Auxiliary Truck Dump #2, Dryer #2, and Baghouse #4 in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on March 10, 1997 and as permitted pursuant to **Construction Permit No. CP159-8288, Plant ID No.159-00005** 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)

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: Cargill Grain Division
Source Location: 500 East State Road 28
County: Tipton
Construction Permit No.: CP-159-8288-00005
SIC Code: 5153
Permit Reviewer: KERAMIDA / KGB

On August 26, 1997 the Office of Air Management (OAM) had a notice published in the the Tipton County Tribune, Tipton, Indiana, stating that Cargill Grain Division had applied for a construction permit to construct and operate additional grain handling and drying facilities with control devices. 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 September 8, 1997, Triad Engineering Inc. (on behalf of Cargill Grain Division) submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

1. Triad stated (Comment #1) that the control device (Baghouse #4) is not integrally hard-wired to the process as stated in the proposed permit. Reasons for not hard-wiring the device were provided. The Office of Air Management (OAM) understands that it is more beneficial for proper operation of the process if the baghouse is not hard-wired. Furthermore, all other items regarding justification as an integral part of the process are met. Therefore, the Baghouse #4 will be considered an integral part of the process.
2. Triad requested (Comments #2,4 & 8) that Appendix A calculations be revised using different maximum throughputs for the Truck Dump #2 and Dryer #2 which reflect the equipment's true maximum throughputs. The calculations were revised using maximum throughput's of 15,000 bushels per hour and 4,000 bushels per hour respectively. Revised Appendix A calculations are attached. These calculations indicate that the new and existing facilities are a minor source for PSD and Part 70 considerations.

Operation Condition #9 and #20 have been deleted.

3. Triad stated (Comment #3) that proposed Operation Condition #7, Performance Testing, should not be required. The applicant believes that engineering specifications of the control device are adequate to demonstrate compliance. The performance testing specified in the proposed permit is required by a New Source Performance Standard and engineering specifications are not adequate to demonstrate compliance.
4. Triad noted (Comment #5) a typographical error in Operation Condition #13. The permit has been corrected.
5. Triad believes (Comment #6) that quarterly baghouse inspections and daily pressure drop readings are excessive. A request was made for yearly inspections and weekly pressure drop readings. The OAM does not believe quarterly inspections will be cumbersome to daily

operations. However, based on the seasonal operations of the facility the permit will require quarterly inspections only when the facility is in operation. Based on the good operating history of this source, the permit has been revised to require weekly pressure drop readings.

6. Triad believes (Comment #7) that visible emissions readings every shift is excessive. Working closely with the baghouse unit and weekly readings were requested. Based on the good operating history of this source, the permit has been revised to require weekly visible emission notations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
10 < MM BTU/HR <100**

Grain Dryer

Company Name: Cargill Grain Division
Address City IN Zip: 500 East State Road 28, Tipton, Indiana 46072
CP: 159-8288
Plt ID: 159-00005
Reviewer: KERAMIDA / KGB
Date: July 31, 1997

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

45.0

394.2

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	14.0	14.0	0.6	140.0	2.8	35.0
Potential Emission in tons/yr	2.8	2.8	0.1	27.6	0.6	6.9

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: Uncontrolled = 140, Low NOx Burner = 81, Flue gas recirculation = 30

Emission Factors for CO: Uncontrolled = 35, Low NOx Burner = 61, Flue gas recirculation = 37

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emissions Calculations
Grain Elevator (PM-10)
Country Elevator-Small**

Company Name: Cargill Grain Division
Address City IN Zip: 500 East State Road 28, Tipton, Indiana 46072
CP: 158-8288
Plt ID: 158-00005
Reviewer: KERAMIDA / KGB
Date: July 31, 1997

ACTUAL HOURS OF OPERATION	Peak	Off-Peak
Hours per day:	14	8
Days per week:	7	5
Weeks per year:	13	39
HOURS PER YEAR:	1274	1560

BUSHEL PER YEAR	
Corn:	0
Bean:	131400000 *
Wheat:	0

GRAIN RECEIVED			GRAIN DRYED
Corn (bu/hr)	Bean (bu/hr)	Wheat (bu/hr)	Bean (bu/hr)
0	15000	0	4000
56 lb/bu	56 lb/bu	60 lb/bu	56 lb/bu
Corn (lb/hr)	Bean (lb/hr)	Wheat (lb/hr)	Bean (lb/hr)
0	840000	0	224000
Corn (ton/hr)	Bean (ton/hr)	Wheat (ton/hr)	Bean (ton/hr)
0	420	0	112
GRAIN THROUGHPUT (TON/HR)			GRAIN THROUGHPUT (TON/HR)
420			112

	PM-10 PARTICULATE MATTER								
	RECEIVING (truck, rail)	After Control (1-0.99)	REMOVAL FROM BINS	DRYING (column)	After Control (1-0.5)	INTERNAL OPERATIONS	After Control (1-0.99)	SHIPPING (Rail)	After Control (1-0.99)
Emission Factor in lb/ton (includes dustiness ratio of 2.5)	0.0375	0.000375	0.0125	0.055	0.0275	0.2	0.002	0.0075	0.000075
Potential Emissions in lb/hr	15.750	0.158	5.250	6.160	3.080	84.000	0.840	3.150	0.032
Potential Emissions in lb/day	378.000	3.780	126.000	147.840	73.920	2016.000	20.160	75.600	0.756
Potential Emissions in ton/yr	68.985	0.690	22.995	26.981	13.490	367.920	3.679	13.797	0.138

Total Potential Emissions 500.678 tons/yr
 Total Potential to Emit (after integral controls) 40.992 tons/yr PTE is less than 100 ton/yr for entire source. Title V not applicable

Methodology

* Bushels per year used in calculations is based on 15,000 bushels/hour for receiving and 4,000 bushels/hour for drying

Emission factors are Interim Factors from AP 42 Table 9.9.1-2 Uncontrolled Emission Factors for Grain Elevators
 Potential Emissions in lb/hr = Throughput (ton/hr)*EF (lb/ton)
 Potential Emissions in lb/day = PE (lb/hr) * 24 hours/day
 Potential Emissions in ton/yr = PE (lb/hr) * 8760 (hours/day) / 2000 (lbs/ton)

Worksheet for maximum allowable throughput for exemption from PSD rules

**Appendix A: Emissions Calculations
Grain Elevator
Country Elevator-Small**

Company Name: Cargill Grain Division
Address City IN Zip: 500 East State Road 28, Tipton, Indiana 46072
CP: 158-8288
Plt ID: 158-00005
Reviewer: KERAMIDA / KGB
Date: July 31, 1997

ACTUAL HOURS OF OPERATION	Peak	Off-Peak
Hours per day:	14	8
Days per week:	7	5
Weeks per year:	13	39
HOURS PER YEAR:	1274	1560

GRAIN RECEIVED		
Corn (bu/hr)	Bean (bu/hr)	Wheat (bu/hr)
0	11723.744	0
56 lb/bu	56 lb/bu	60 lb/bu
Corn (lb/hr)	Bean (lb/hr)	Wheat (lb/hr)
0	656529.680	0
Corn (ton/hr)	Bean (ton/hr)	Wheat (ton/hr)
0	328.265	0
GRAIN THROUGHPUT (TON/HR)		
328.265		

BUSHEL PER YEAR	
Corn:	0
Bean:	102700000 *
Wheat:	0

	TOTAL PARTICULATE MATTER								
	RECEIVING (truck, rail)	After Control (1-0.99)	REMOVAL FROM BINS	DRYING (column)	After Control (1-0.5)	INTERNAL OPERATIONS	After Control (1-0.99)	SHIPPING (Rail)	After Control (1-0.99)
Emission Factor in lb/ton (includes dustiness ratio of 2.5)	0.15	0.0015	0.05	0.22	0.11	0.825	0.00825	0.0275	0.000275
Potential Emissions in lb/hr	49.240	0.492	16.413	72.218	36.109	270.818	2.708	9.027	0.090
Potential Emissions in lb/day	1181.753	11.818	393.918	1733.238	866.619	6499.644	64.996	216.655	2.167
Potential Emissions in ton/yr	215.670	2.157	71.890	316.316	158.158	1186.185	11.862	39.540	0.395

Total Potential Emissions 1829.601 tons/yr
 Total Potential to Emit (after integral controls) 244.462 tons/yr
 Actual Emiss.(based on 2834 hr/yr. Calcs not shown) 101.189 tons/yr

PTE is greater than 250 ton/yr. Construction is a major PSD source. 247 ton/yr cap required
 247 ton/yr cap can be met (cap will include natural gas emissions not shown here)

Methodology

* Bushels per year will be used to implement 244 ton/yr PSD cap.

Emission factors are Interim Factors from AP 42 Table 9.9.1-2 Uncontrolled Emission Factors for Grain Elevators

Potential Emissions in lb/hr = Throughput (ton/hr)*EF (lb/ton)

Potential Emissions in lb/day = PE (lb/hr) * 24 hours/day

Potential Emissions in ton/yr = PE (lb/hr) * 8760 (hours/day) / 2000 (lbs/ton)

**Appendix A: Emissions Calculations
Grain Elevator (Total Particulate Matter)
Country Elevator-Small**

Company Name: Cargill Grain Division
Address City IN Zip: 500 East State Road 28, Tipton, Indiana 46072
CP: 158-8288
Plt ID: 158-00005
Reviewer: KERAMIDA / KGB
Date: July 31, 1997

ACTUAL HOURS OF OPERATION	Peak	Off-Peak
Hours per day:	14	8
Days per week:	7	5
Weeks per year:	13	39
HOURS PER YEAR:	1274	1560

BUSHEL PER YEAR	
Corn:	0
Bean:	131400000 *
Wheat:	0

GRAIN RECEIVED			GRAIN DRYED
Corn (bu/hr)	Bean (bu/hr)	Wheat (bu/hr)	Bean (bu/hr)
0	15000	0	4000
56 lb/bu	56 lb/bu	60 lb/bu	56 lb/bu
Corn (lb/hr)	Bean (lb/hr)	Wheat (lb/hr)	Bean (lb/hr)
0	840000	0	224000
Corn (ton/hr)	Bean (ton/hr)	Wheat (ton/hr)	Bean (ton/hr)
0	420	0	112
GRAIN THROUGHPUT (TON/HR)			GRAIN THROUGHPUT (TON/HR)
420			112

	TOTAL PARTICULATE MATTER								
	RECEIVING (truck, rail)	After Control (1-0.99)	REMOVAL FROM BINS	DRYING (column)	After Control (1-0.5)	INTERNAL OPERATIONS	After Control (1-0.99)	SHIPPING (Rail)	After Control (1-0.99)
Emission Factor in lb/ton (includes dustiness ratio of 2.5)	0.15	0.0015	0.05	0.22	0.11	0.825	0.00825	0.0275	0.000275
Potential Emissions in lb/hr	63.000	0.630	21.000	24.640	12.320	346.500	3.465	11.550	0.116
Potential Emissions in lb/day	1512.000	15.120	504.000	591.360	295.680	8316.000	83.160	277.200	2.772
Potential Emissions in ton/yr	275.940	2.759	91.980	107.923	53.962	1517.670	15.177	50.589	0.506

Total Potential Emissions 2044.102 tons/yr
 Total Potential to Emit (after integral controls) 164.384 tons/yr PTE is less than 250 ton/yr. Construction is a minor PSD source.

Methodology

* Bushels per year used in calculations is based on 15,000 bushels/hour for receiving and 4,000 bushels/hour for drying

Emission factors are Interim Factors from AP 42 Table 9.9.1-2 Uncontrolled Emission Factors for Grain Elevators
 Potential Emissions in lb/hr = Throughput (ton/hr)*EF (lb/ton)
 Potential Emissions in lb/day = PE (lb/hr) * 24 hours/day
 Potential Emissions in ton/yr = PE (lb/hr) * 8760 (hours/day) / 2000 (lbs/ton)

Worksheet showing emissions using PSD throughput cap

Appendix A: Emissions Calculations
Grain Elevator
Country Elevator-Small

Company Name: Cargill Grain Division
Address City IN Zip: 500 East State Road 28, Tipton, Indiana 46072
CP: 158-8288
Plt ID: 158-00005
Reviewer: KERAMIDA / KGB
Date: July 31, 1997

ACTUAL HOURS OF OPERATION	Peak	Off-Peak
Hours per day:	14	8
Days per week:	7	5
Weeks per year:	13	39
HOURS PER YEAR:	1274	1560

GRAIN RECEIVED		
Corn (bu/hr)	Bean (bu/hr)	Wheat (bu/hr)
0	11723.74429	0
56 lb/bu	56 lb/bu	60 lb/bu
Corn (lb/hr)	Bean (lb/hr)	Wheat (lb/hr)
0	656529.6804	0
Corn (ton/hr)	Bean (ton/hr)	Wheat (ton/hr)
0	328.2648402	0
GRAIN THROUGHPUT (TON/HR)		
328.2648402		

BUSHEL PER YEAR	
Corn:	0
Bean:	102700000 *
Wheat:	0

	PM-10 PARTICULATE MATTER								
	RECEIVING (truck, rail)	After Control (1-0.99)	REMOVAL FROM BINS	DRYING (column)	After Control (1-0.5)	INTERNAL OPERATIONS	After Control (1-0.99)	SHIPPING (Rail)	After Control (1-0.99)
Emission Factor in lb/ton (includes dustiness ratio of 2.5)	0.0375	0.000375	0.0125	0.055	0.0275	0.2	0.002	0.0075	0.000075
Potential Emissions in lb/hr	12.310	0.123	4.103	18.055	9.027	65.653	0.657	2.462	0.025
Potential Emissions in lb/day	295.438	2.954	98.479	433.310	216.655	1575.671	15.757	59.088	0.591
Potential Emissions in ton/yr	53.918	0.539	17.973	79.079	39.540	287.560	2.876	10.784	0.108

Total Potential Emissions 449.313 tons/yr
 Total Potential to Emit (after integral controls) 61.035 tons/yr
 Actual Emiss.(based on 2834 hr/yr. Calcs not shown) 32.58 tons/yr

Methodology

* Bushels per year are limited due to the total particulate matter PSD cap of 244 tons/yr

Emission factors are Interim Factors from AP 42 Table 9.9.1-2 Uncontrolled Emission Factors for Grain Elevators

Potential Emissions in lb/hr = Throughput (ton/hr)*EF (lb/ton)

Potential Emissions in lb/day = PE (lb/hr) * 24 hours/day

Potential Emissions in ton/yr = PE (lb/hr) * 8760 (hours/day) / 2000 (lbs/ton)