

PERMIT BOOK

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 072011-005 Project Number: 2011-04-011

Installation Number: 111-0003

Parent Company: Archer Daniels Midland

Parent Company Address: 4666 Faries Parkway, Decatur, IL 62525

Installation Name: ADM Grain Company - La Belle Elevator

Installation Address: 210 N. 7th, La Belle, MO 63447

Location Information: Lewis County, S5, T61N, R9W

Application for Authority to Construct was made for:

A ■ bushel per hour receiving pit, a ■ bushel per hour natural gas, tower design grain dryer, ■ non-packed bushels of permanent storage, a ■ bushel per hour truck shipping grain spout, and associated conveyors. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUL 11 2011

EFFECTIVE DATE

A handwritten signature in cursive script, reading "Kyna Z. Moore".
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Project No.	2011-04-011

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

ADM Grain Company - La Belle Elevator
Lewis County, S5, T61N, R9W

1. Emission Limitation
 - A. ADM Grain Company - La Belle Elevator shall emit less than 15.0 tons of particulate matter less than ten microns in diameter (PM₁₀) in any consecutive 12-month period from the emission units in Table 2.
 - B. Attachments A and B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. Haul Road Control
ADM Grain Company - La Belle Elevator shall apply water, lignin sulfate, or other controls approved by the Air Pollution Control Program to haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
3. Control Device Requirement – Baffles
ADM Grain Company – La Belle Elevator shall install and operate one-way gravity flow baffles on the new receiving pit (EU-01).
4. Control Device Requirement – Grain Handling
 - A. ADM Grain Company – La Belle Elevator shall not aspirate any of the conveyors or legs considered part of grain handling and their drop/transfer points to the ambient air.
 - B. Grain handling is defined as emissions originating from any grain transfer, excluding process emissions from receiving (EU-01), drying (EU-02), bin vents (EU-04), truck shipping (EU-05), and haul roads (EU-06).
5. Control Device Requirement - Sleeve
ADM Grain Company – La Belle Elevator shall install a flexible sleeve at the end of the new truck shipping grain spout (EU-05). A flexible sleeve shall be used

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

whenever grain is processed through EU-05. The flexible sleeve shall extend below the top of the shipping trailer or container sides.

6. Record Keeping and Reporting Requirements
 - A. ADM Grain Company - La Belle Elevator shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
 - B. ADM Grain Company - La Belle Elevator shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2011-04-011
Installation ID Number: 111-0003
Permit Number:

ADM Grain Company - La Belle Elevator
210 N. 7th
La Belle, MO 63447

Complete: April 5, 2011

Parent Company:
Archer Daniels Midland
4666 Faries Parkway
Decatur, IL 62525

Lewis County, S5, T61N, R9W

REVIEW SUMMARY

- ADM Grain Company - La Belle Elevator has applied for authority to construct a ■ bushel per hour receiving pit, a ■ bushel per hour natural gas, tower design grain dryer, ■ non-packed bushels of permanent storage, a ■ bushel per hour truck shipping grain spout, and associated conveyors.
- Hazardous Air Pollutant (HAP) emissions are expected from the combustion of natural gas in the dryer.
- None of the New Source Performance Standards (NSPS) apply to the installation. NSPS Subpart DD *Standards of Performance for Grain Elevators* August 1978, does not apply to the installation. The installation does not mill or extract oil from grain. The total storage capacity of the installation including this project is ■ million bushels. Permanent storage capacity of the installation is ■ million bushels.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Baffles in the receiving pit, enclosure without negative pressure for conveyors, a flexible shipping sleeve, and undocumented watering of haul roads are being used to control the particulate matter (PM), particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}) emissions.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions of PM remain at minor source levels. Other pollutants are proportionately reduced to de minimis levels.

- This installation is located in Lewis County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential PM₁₀ emissions of the application are below the de minimis level. Modeling is not required for PM.
- Emissions testing is not required for the equipment.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Archer Daniels Midland (ADM) operates a grain elevator in La Belle, Missouri. ADM purchased the elevator in the 1990's from Quincy Soybean. Emission units at the existing installation consist of grain receiving, handling/conveying, storage bin vents, shipping via truck, and unpaved haul roads. The installation was a de minimis source under construction permits and did not have an operating permit. After this project, the installation will be a minor source under construction permits and have a basic operating permit. The following permit has been issued to ADM from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
1095-006	Receiving pit, conveyors, storage bins

PROJECT DESCRIPTION

ADM proposes to install a model █ grain dryer. It is tower design and natural gas fired. The dryer is rated at █ bushels per hour and █ million British thermal units per hour heat input. ADM also proposes to install a █ bushel per hour truck receiving pit equipped with baffles, █ bushel per hour enclosed legs/conveyors, three storage bins (█ bushel grain bin, █ bushel wet bin, and █ bushel shipping bin, each non-packed volume), and a █ bushel per hour truck shipping grain spout with a flexible sleeve. Shipping is the project's bottleneck on an annual basis. Emissions from the dryer are uncontrolled. Haul roads associated with the new equipment will be controlled by undocumented watering or lignin sulfate. Conservatively, fifty percent of grain received at the new pit was assumed to arrive in straight trucks which are typically smaller and have greater emissions associated with them compared to hopper trucks. This is a conservative assumption because industry-wide more hopper bottom trucks are being used than straight trucks, and the trend towards hopper bottom trucks is growing. The

new receiving pit building is two-sided construction with a roof, and will feed the new bins exclusively. Baffles in the receiving pit are located just below the pit grating. The default baffle position is closed. When a truck is dumping, the weight of the grain opens only the baffles that the grain contacts. The other baffles remain closed, thus reducing airflow and entrained dust from escaping the pit. ADM has requested confidentiality for process rates and storage capacities. This is the public version of the permit. A confidential version is available under project 2011-04-012.

Table 2: Project Emission Units

Emission Unit	Description	Maximum Hourly Design Rate (MHDR)– Limited Basis (tons of grain per hour)
EU-01	Hopper Bottom Receiving	
EU-01a	Straight Truck Receiving	
EU-02	Sukup U4718 Tower Dryer	
EU-03	Grain Handling	
EU-04	Bin Vents	
EU-05	Truck Shipping	
EU-06	Hopper Bottom Receiving Haul Road	
	Straight Truck Receiving Haul Road	
	Shipping Haul Road	

¹ Hopper Bottom Receiving Road MHDR also expressed as ■ vehicular miles traveled per hour (VMT/hr).

² Straight Truck Receiving Road MHDR also expressed as ■ VMT/hr.

³ Shipping Road MHDR also expressed as ■ VMT/hr.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 *Grain Elevators and Processes* May 2003, Section 1.4 *Natural Gas Combustion* July 1998, and Section 13.2.2 *Unpaved Roads* November 2006.

Even though the project will handle corn more than any other grain, the highest density for grains to be handled was used to convert processing rates in bushels to tons, 60 pounds per bushel. Therefore, no special condition is required for throughputs of corn, beans, wheat, or other grains. The dryer PM₁₀ and PM_{2.5} emissions have been adjusted to include condensibles from natural gas combustion.

The receiving pit baffles were assigned forty percent control efficiency. Fifty percent control efficiency was applied to the undocumented watering of unpaved haul roads. Ninety-five percent capture efficiency was applied to the grain handling emissions for the use of enclosed conveyors. It was assumed that five percent of emissions generated would be emitted through enclosure flanges. The captured emissions would be re-introduced to the grain flow by conveyor design. The basis of the emission factor for grain handling is from traditional elevators. Traditional elevators use a centralized headhouse building where all grain is routed. Most conveyors or legs are exposed and located inside the headhouse. This project's equipment is of modern design, where a headhouse is not used. The legs and conveyors are routed outdoors and are enclosed

from the elements. Sixty percent control efficiency has traditionally been assigned by the Air Pollution Control Program for the use of flexible sleeves at grain shipping spouts.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8,760 hours per year), including a voluntary limit on PM₁₀ emissions to avoid refined modeling. PM and PM_{2.5} emissions from the entire project and combustion emissions from the dryer have been proportionately reduced. The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	Conditioned Potential Emissions of the Application	New Installation Conditioned Potential
PM _{2.5}	10.0	N/D	0.32	2.32	N/D
PM ₁₀	15.0	< 15.0	1.86	< 15.0	30.0
PM	25.0	< 25.0	N/D	52.27	77.27
SOx	40.0	N/A	N/A	0.05	0.05
NOx	40.0	N/A	N/A	8.95	8.95
VOC	40.0	N/A	N/A	0.49	0.49
CO	100.0	N/A	N/A	7.52	7.52
HAPs	10.0/25.0	N/A	N/A	0.17	0.17

N/A = Not Applicable; N/D = Not Determined

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels. Potential emissions of PM remain at minor source levels.

APPLICABLE REQUIREMENTS

ADM Grain Company - La Belle Elevator shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of a hardcopy Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions. Alternatively, submission of an

electronic copy via MoEIS is required May 1.

- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 applies to the bin vents as they are point sources with a potential to emit exceeding 0.5 pounds per hour of PM.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

David Little
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 30, 2011, received April 5, 2011, designating Archer Daniels Midland as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Northeast Regional Office Site Survey, dated April 18, 2011.

Attachment A: Project PM₁₀ Compliance Worksheet

(g) Divide the monthly emissions in pounds by 2,000 [(f) / 2,000 = (g)]. See Attachment B for further instructions.

Attachment B: Project PM₁₀ Compliance Worksheet

ADM Grain Company - La Belle Elevator
Lewis County, S5, T61N, R9W
Project Number: 2011-04-011
Installation ID Number: 111-0003
Permit Number: _____

This sheet covers the period from _____ to _____.
(month, year) (month, year)

(a) Current month's PM ₁₀ emissions (tons)	
(b) 12-month total (d) from previous month's Attachment B (tons)	
(c) This month's PM ₁₀ emissions (a) from previous 12-months Attachment B (tons)	
(d) Current 12-month total PM ₁₀ emissions (tons) [(a) + (b) - (c) = (d)]	

Instructions:

- (a) Record the current month's PM₁₀ emissions (tons) from Attachment A.
- (b) Record the 12-month total (d) from the previous month's Attachment B.
- (c) Record the one month PM₁₀ emissions (a) from the previous 12-month Attachment B. For example, the monthly emissions from one year ago this month.
- (d) Calculate the new 12-month PM₁₀ emissions total. A 12-month PM₁₀ emissions total of less than 15.0 tons indicates compliance.

Ms. Miranda Gerard
Environmental Specialist
ADM Grain Company - La Belle Elevator
4666 Faries Parkway
Decatur, IL 62525

RE: New Source Review Permit - Project Number: 2011-04-011

Dear Ms. Gerard:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application, and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact David Little, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:dll

Enclosures

c: Northeast Regional Office
PAMS File: 2011-04-011

Permit Number: