

# 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: **082014-011** Project Number: 2014-05-048  
Installation Number: 007-0002

Parent Company: Archer Daniels Midland Company

Parent Company Address: P.O. Box 1470, Decatur, IL 62525

Installation Name: Archer Daniels Midland Mexico

Installation Address: 400 E. Holt Street, Mexico, MO 65265

Location Information: Audrain County, S28, T51N, R9W

Application for Authority to Construct was made for:

The modification of the West Truck Dump receiving pit and transfer equipment as well as installing a total enclosure around the West Truck Dump receiving pit with baghouse control. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

**AUG 19 2014**

EFFECTIVE DATE

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 startup 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 startup 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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**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."*

Archer Daniels Midland Mexico  
Audrain County, S28, T51N, R9W

1. Control Device Requirement-Baghouse
  - A. Archer Daniels Midland Mexico shall control emissions from the West Dump (EU-0025) using an enclosure equipped with baghouse as specified in the permit application.
  - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.
  - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - D. Archer Daniels Midland Mexico shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
  - E. Archer Daniels Midland Mexico shall maintain a copy of the baghouse manufacturer's performance warranty on site.
  - F. Archer Daniels Midland Mexico shall maintain an operating and maintenance log for the baghouses which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

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### SPECIAL CONDITIONS:

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

2. Capture Requirement
  - A. Archer Daniels Midland Mexico shall only receive grain at West Dump (EU-0025) in a completely enclosed structure. The completely enclosed structure shall be equipped with retractable doors that are completely closed during the grain receiving operation.
  - B. Once Archer Daniels Midland Mexico begins the modification to West Dump (EU-0025) no grain shall be received at the West Dump (EU-0025) until the construction of the complete enclosed structure is completed.
3. Record Keeping and Reporting Requirements
  - A. Archer Daniels Midland Mexico 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.
  - B. Archer Daniels Midland Mexico 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 show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2014-05-048  
Installation ID Number: 007-0002  
Permit Number:

Archer Daniels Midland Mexico  
400 E. Holt Street  
Mexico, MO 65265

Complete: May 19, 2014

Parent Company:  
Archer Daniels Midland Company  
P.O. Box 1470  
Decatur, IL 62525

Audrain County, S28, T51N, R9W

REVIEW SUMMARY

- Archer Daniels Midland Mexico has applied for authority to modify the West Truck Dump receiving pit and transfer equipment as well as installing a total enclosure around the West Truck Dump receiving pit with baghouse control.
- HAP emissions are not expected from the proposed equipment.
- 40 CFR Part 60 New Source Performance Standards (NSPS) Subpart DD, Standards of Performance for Grain Elevators does not apply to the installation as grain handling operations were originally installed before August 3, 1978.
  - Some individual conveyors within the affected facility were replaced with like kind units but were not modified according to NSPS because there was no increase in emission rate to the atmosphere. These conveyors that were replaced had the same grain handling capacity and were equipped with the same air pollution control equipment and therefore did not impact the emissions to the environment.
  - This project does modify an existing receiving pit and install new transfer equipment with a higher capacity. However, the modification is currently bottlenecked to the same annual throughput as what was originally permitted and Archer Daniels Midland Mexico is installing air pollution control equipment that has a higher capture and control efficiency than what was there previously permitted. Therefore, no increase in emissions of a regulated pollutant is expected that would be defined as a modification under the NSPS and Subpart DD still does not apply to this installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A baghouse is being used to control the particulate matter emissions from the equipment in this permit.

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Audrain 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 emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- An application to amend your Part 70 Operating Permit is required for this installation within one year of equipment startup.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION DESCRIPTION

The ADM soybean processing facility in Mexico, Missouri consists of an oil extraction plant and a biodiesel plant. The installation is considered an existing major source of air pollutants for new source review purposes and a Part 70 source for operating permit purposes. The installation has a Part 70 operating permit (permit number OP2012-009B) that expires on March 12, 2017.

The typical extraction process for soybeans consists of three steps: soybean receiving, preparation and solvent extraction. Soybeans are received by either truck or rail and are unloaded into grain receiving pits. After receiving, the beans are elevated into concrete silos. From the silos, the beans are conveyed to the preparation building. Inside the preparation building beans are cleaned, heated and then dehulled and cracked into small pieces. These pieces are conveyed to flakers that smash the pieces into thin flakes that are ready for extraction. In the extraction process, the flakes are conveyed through a hexane bath that extracts the soybean oil from the flakes. The oil/hexane mixture is driven off the spent flakes in the desolventizer/toaster and sent to condensers to be separated. The spent flakes are then dried, cooled and ground. The ground meal is stored and sold as agricultural feed.

The following New Source Review permits have been issued to Archer Daniels Midland (ADM) Mexico from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0284-007	Construction of a boiler
0795-002	Construction of a new soybean dehulling system
*032006-010	Section (5) permit for the construction of a 36 million gallon per year biodiesel production plant
*102006-015	Section (5) permit to modify and install a previously permitted biodiesel production facility
102010-003	Section (8) permit for an increase in crushing capacity
*032006-010A	Amendment to Permit 032006-010
072009-005	Section (5) permit for the construction of a new sodium methylate production process
*102006-015A	Amendment to Permit 102006-015. Supercedes conditions contained in Permit Amendment 032006-010A
032013-011	Section (5) permit for biofuel expansion. Supercedes conditions contained in construction permits 032006-010 and 102006-015

\*Permits issued to Mid-America Biofuels, LLC. Mid-America Biofuels, LLC and ADM-Mexico have been determined to be one installation.

## PROJECT DESCRIPTION

ADM Mexico is expanding the capacity of their West Dump (EU-0025) receiving pit by modifying two existing elevator legs and adding two new drag conveyors (Elevator Conveying EU-0090) and extending the pit to allow hopper trailers to dump with one stop. With this modification ADM Mexico is also installing a totally enclosed structure with baghouse control to capture emissions from the grain received at the West Dump. The affected and new emission units from this modification are the West Dump receiving pit, the new and modified grain transfer equipment, the West Silos (EU-0060-0085) and the associated receiving haul roads. The MHDR of the old West Dump receiving pit was 300 tons per hour the MHDR of the modified West Dump receiving pit and transfer equipment is 600 tons per hour. However the West Dump receiving pit will still be bottlenecked by the M1 Conveyor which transfers grain from the West Silos to soybean oil plant. The MDHR of the M1 Conveyor is 96.25 tons per hour. If at any time the M1 Conveyor is modified to where ADM Mexico can transfer more than 96.25 tons of grain per hour, the emissions from the modified receiving pit, transfer and storage equipment must be included in the debottlenecked project.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used for the grain handling 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 & Processes*, (May 2003). A 99% capture efficiency was given to the total enclosure around the West Dump receiving pit as ADM Mexico has agreed to close all doors to the receiving pit area while grain is being received. A 99% control efficiency was given to the baghouse controlling that emission point.

Haul road emissions were not considered for this application as there is no increase in haul traffic expected on an annual basis due to the fact that the modified receiving pit and new transfer equipment being bottlenecked by the transfer conveyor after these processes.

The following table provides an emissions summary for this project. Existing potential emissions were taken from construction permit 102006-015A. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the new equipment and modified equipment, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2013 EIQ)	*Potential Emissions of the Application	**Controlled Potential Emissions of the Application
PM	25.0	N/D	N/D	51.01	11.00
PM <sub>10</sub>	15.0	>250.0	16.48	20.28	2.81
PM <sub>2.5</sub>	10.0	N/D	4.55	3.46	0.50
SO <sub>x</sub>	40.0	>250.0	0.14	N/A	N/A
NO <sub>x</sub>	40.0	<250.0	24.21	N/A	N/A
VOC	40.0	>250.0	141.40	N/A	N/A
CO	100.0	<250.0	20.34	N/A	N/A
GHG (CO <sub>2</sub> e)	75,000	N/D	N/D	N/A	N/A
GHG (mass)	250.0	N/D	N/D	N/A	N/A
HAPs	10.0/25.0	>25.0	0.00	N/A	N/A

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

\*Potential Emissions of the Application is the uncontrolled potential emissions of the project. These totals show that a construction permit is required.

\*\* Controlled Potential Emissions of the Application considered the new baghouse and total enclosure around the modified receiving pit and new transfer equipment as well as the required baghouse control the internal handling equipment affected by this project.

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

### APPLICABLE REQUIREMENTS

Archer Daniels Midland Mexico 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



- *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. ADM – Mexico is in compliance with the emission limit of this rule.

**STAFF RECOMMENDATION**

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Gerad Fox  
New Source Review Unit

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Date

**PERMIT DOCUMENTS**

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 8, 2014, received May 19, 2014, designating Archer Daniels Midland Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>m/s</b> ..... meters per second
<b>°F</b> .....degrees Fahrenheit	<b>Mgal</b> ..... 1,000 gallons
<b>acfm</b> .....actual cubic feet per minute	<b>MW</b> ..... megawatt
<b>BACT</b> ..... Best Available Control Technology	<b>MHDR</b> ..... maximum hourly design rate
<b>BMPs</b> ..... Best Management Practices	<b>MMBtu</b> .... Million British thermal units
<b>Btu</b> ..... British thermal unit	<b>MMCF</b> ..... million cubic feet
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>MSDS</b> ..... Material Safety Data Sheet
<b>CAS</b> ..... Chemical Abstracts Service	<b>NAAQS</b> ... National Ambient Air Quality Standards
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>NESHAPs</b> ..... National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> ..... Code of Federal Regulations	<b>NO<sub>x</sub></b> ..... nitrogen oxides
<b>CO</b> ..... carbon monoxide	<b>NSPS</b> ..... New Source Performance Standards
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>NSR</b> ..... New Source Review
<b>CO<sub>2e</sub></b> ..... carbon dioxide equivalent	<b>PM</b> ..... particulate matter
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> ..... Code of State Regulations	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> ..... dry standard cubic feet	<b>ppm</b> ..... parts per million
<b>EQ</b> ..... Emission Inventory Questionnaire	<b>PSD</b> ..... Prevention of Significant Deterioration
<b>EP</b> ..... Emission Point	<b>PTE</b> ..... potential to emit
<b>EPA</b> ..... Environmental Protection Agency	<b>RACT</b> ..... Reasonable Available Control Technology
<b>EU</b> ..... Emission Unit	<b>RAL</b> ..... Risk Assessment Level
<b>fps</b> ..... feet per second	<b>SCC</b> ..... Source Classification Code
<b>ft</b> ..... feet	<b>scfm</b> ..... standard cubic feet per minute
<b>GACT</b> ..... Generally Available Control Technology	<b>SIC</b> ..... Standard Industrial Classification
<b>GHG</b> ..... Greenhouse Gas	<b>SIP</b> ..... State Implementation Plan
<b>gpm</b> ..... gallons per minute	<b>SMAL</b> ..... Screening Model Action Levels
<b>gr</b> ..... grains	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>GWP</b> ..... Global Warming Potential	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>HAP</b> ..... Hazardous Air Pollutant	<b>tph</b> ..... tons per hour
<b>hr</b> ..... hour	<b>tpy</b> ..... tons per year
<b>hp</b> ..... horsepower	<b>VMT</b> ..... vehicle miles traveled
<b>lb</b> ..... pound	<b>VOC</b> ..... Volatile Organic Compound
<b>lbs/hr</b> ..... pounds per hour	
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> .....micrograms per cubic meter	

Mr. Keith Stumpe  
Plant Manager  
Archer Daniels Midland Mexico  
400 E. Holt Street  
Mexico, MO 65265

RE: New Source Review Permit - Project Number: 2014-05-048

Dear Mr. Stumpe:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions, if any, 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 amended 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 me at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:gfk

Enclosures

c: Northeast Regional Office  
PAMS File: 2014-05-048

Permit Number:

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