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: 092013-012  Project Number: 2012-11-043
Installation Number: 139-0050

Parent Company: Archer Daniels Midland
Parent Company Address: 4666 Faries Parkway, Decatur, IL 62525
Installation Name: Archer Daniels Midland - Rhineland
Installation Address: 115 Bluff Street, Rhineland, MO 65069
Location Information: Montgomery County, S30, T46N, R5W

Application for Authority to Construct was made for:
Installation of a 300,000 bushel ground storage pile and the associated loading equipment.
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.

SEP 17 2013
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 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.
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 - Rhineland
Montgomery County, S30, T46N, R5W

1. PM$_{10}$ Emission Limitation
   A. Archer Daniels Midland - Rhineland shall emit less than 15.0 tons of PM$_{10}$ in any consecutive 12-month period from the entire installation as shown in Table 1.

   B. Attachment A or equivalent forms, such as an electronic form, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.

Table 1: Emission Units

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Description</th>
<th>Bottlenecked MHDR</th>
<th>True MHDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-01</td>
<td>Grain Receiving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-02</td>
<td>Grain Handling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-03</td>
<td>Grain Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-04</td>
<td>Truck Loading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-05</td>
<td>Grain Dryer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-06</td>
<td>Grain Receiving (storage pile)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-07</td>
<td>Grain Storage (storage pile)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-08</td>
<td>Grain Handling (storage pile)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-09</td>
<td>Truck Loading (storage pile)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU-10</td>
<td>Haul Road</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N/A = Not applicable

2. Record Keeping and Reporting Requirements
   A. Archer Daniels Midland - Rhineland 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 - Rhineland 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 (6) REVIEW
Project Number: 2012-11-043
Installation ID Number: 139-0050
Permit Number:

Archer Daniels Midland - Rhineland Complete: November 16, 2012
115 Bluff Street
Rhineland, MO 65069

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

Montgomery County, S30, T46N, R5W

REVIEW SUMMARY

- Archer Daniels Midland - Rhineland has applied for authority to install a 300,000 bushel ground storage pile and the associated loading equipment.

- HAP emissions from this facility are products of propane combustion.

- None of the New Source Performance Standards (NSPS) apply to the installation. 40 CFR 60: Subpart DD Standards of Performance for Grain Elevators does not apply to this facility because the maximum storage capacity is 746,174 bushels.

- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.

- No control devices will be used to control emissions at this installation.

- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of PM\textsubscript{10} are conditioned below the de minimis level. Potential emissions of PM are above the de minimis level but remain below the major source level.

- This installation is located in Montgomery 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 250.0 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed for this review. No modeling standard currently exists for PM.
• Emissions testing is not required for the equipment.

• No Operating Permit is required for this installation.

• Approval of this permit is recommended with special conditions.

INSTALLATION/PROJECT DESCRIPTION

Archer Daniels Midland has requested confidentiality for this project in order to protect trade secrets. Archer Daniels Midland recently acquired a grain elevator located in Rhineland, Missouri. The facility had not previously received a construction permit from the Missouri Air Pollution Control Program. However, the facility was moved in 1993 due to flooding which would have required a construction permit. In 1995 additional storage bins and the associated conveyance system was constructed which would have also required a construction permit. Archer Daniels Midland – Rhineland (herein referred to as ADM) has applied for a construction permit for the installation of a new 300,000 bushel ground storage pile and the associated loading equipment in accordance with Missouri State Rule 10 CSR 10-6.060 Construction Permits Required. Due to the previously unpermitted projects that required a construction permit, ADM has requested a voluntary installation wide PM$_{10}$ limit below the de minimis level. ADM has the potential to receive and ship grain from the ground storage pile at a rate equal to [number] tons per hour. ADM has the potential to receive grain at a rate equal to [number] tons per hour and ship grain at a rate equal to [number] tons per hour from the existing grain elevator. Although the conveyance system in place at this facility is rated at [number] tons per hour, the existing grain elevator will operate at a bottlenecked rate equal to [number] tons per hour due to the MHDR of the grain receiving pit. The existing grain dryer at this facility, which is a rack type dryer, is capable of drying up to [number] tons of grain per hour and the associated burner is rated at 10 MMBtu/hr. ADM is not required to apply for an operating permit at this time. ADM has the potential to emit particulate matter from grain processing and other pollutants as a result of propane combustion. No control devices will be installed to limit emissions.

No permits have been issued to Archer Daniels Midland - Rhineland from the Air Pollution Control Program.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the following sections of the EPA document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition:
• Section 9.9.1 Grain Elevators and Processes, May 2003.
• Section 13.2.2, Unpaved Roads, November 2006.
• Section 1.5, Liquified Petroleum Gas Combustion, July 2008.

The following table provides an emissions summary for this project. Grain will be received and shipped by straight and hopper trucks. It is expected that the majority of the trucks used will be hopper trucks. The grain receiving (EP-01 and EP-06) emissions
were calculated using the scenario of 50% hopper trucks and 50% straight trucks. Likewise, the receiving/shipping haul roads (EP-10) emissions were calculated using the same 50/50 split. Existing potential emissions were not calculated because this is the first construction permit for this facility. Existing actual emissions have not been calculated and therefore were not included within this permit. Potential emissions of the application represent the potential of the ground storage pile and the associated equipment, assuming continuous operation (8760 hours per year). Unconditioned potential emissions of the installation represent the potential of all equipment located at the ADM facility, assuming continuous operation (8760 hours per year). The installation conditioned potential accounts for a voluntary installation wide PM$_{10}$ emission limit below the de minimis level.

Table 2: Emissions Summary (tons per year)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25.0</td>
<td>N/A</td>
<td>603.04</td>
<td>1401.18</td>
<td>47.41</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>15.0</td>
<td>N/A</td>
<td>202.32</td>
<td>443.34</td>
<td>&lt;15.0</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>10.0</td>
<td>N/A</td>
<td>29.67</td>
<td>67.40</td>
<td>2.28</td>
</tr>
<tr>
<td>SOx</td>
<td>40.0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.03</td>
<td>N/A</td>
</tr>
<tr>
<td>NOx</td>
<td>40.0</td>
<td>N/A</td>
<td>N/A</td>
<td>4.29</td>
<td>N/A</td>
</tr>
<tr>
<td>VOC</td>
<td>40.0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.24</td>
<td>N/A</td>
</tr>
<tr>
<td>CO</td>
<td>100.0</td>
<td>N/A</td>
<td>N/A</td>
<td>3.61</td>
<td>N/A</td>
</tr>
<tr>
<td>GHG (CO$_{2}$e)</td>
<td>100,000</td>
<td>N/A</td>
<td>N/A</td>
<td>5,182.2</td>
<td>N/A</td>
</tr>
<tr>
<td>GHG (mass)</td>
<td>250.0</td>
<td>N/A</td>
<td>N/A</td>
<td>5,153.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HAPs</td>
<td>10.0/25.0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.08</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A = Not Applicable

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 PM$_{10}$ are conditioned below the de minimis level. Potential emissions of PM are above the de minimis level but remain below the major source level.

APPLICABLE REQUIREMENTS

Archer Daniels Midland - Rhineland 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.
GENERAL REQUIREMENTS

- Submission of Emission Data, Emission Fees and Process Information, 10 CSR 10-6.110
- 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

- New Source Performance Regulations, 10 CSR 10-6.070
  - Standards of Performance for Grain Elevators, 40 CFR Part 60, Subpart DD does not apply to this facility because the permanent storage capacity is less than 2.5 million bushels.
- Restriction of Emission of Particulate Matter From Industrial Processes, 10 CSR 10-6.400 applies to the grain storage at this installation, but the installation is in compliance with the rule.

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.

________________________________   _________________________________
J Luebbert Date
New Source Review Unit

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 14, 2012, received November 16, 2012, designating Archer Daniels Midland as the owner and operator of the installation.
### Attachment A – PM\(_{10}\) Compliance Worksheet

Archer Daniels Midland - Rhineland  
Montgomery County, S30, T46N, R5W  
Project Number: 2012-11-043  
Installation ID Number: 139-0050  
Permit Number: _______

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

<table>
<thead>
<tr>
<th>Month</th>
<th>Amount of Grain (tons)</th>
<th>PM(_{10}) Emission Factor (lb/ton)</th>
<th>Monthly PM(_{10}) Emissions (pounds)</th>
<th>Monthly PM(_{10}) Emissions (tons)</th>
<th>Previous Month’s 12-Month PM(_{10}) Emissions (tons)</th>
<th>Monthly PM(_{10}) Emissions from Previous Year (tons)</th>
<th>Current 12-Month PM(_{10}) Emissions (tons)</th>
</tr>
</thead>
</table>
| Example  
08/2013    | Dried                  | 10,000                               | 0.75                                  | 7,500.0                             | 4.52                                                  | 2.0                                                   | 1.0                                      | 5.52                                    |
| Received    | 10,000                 | 0.154                                | 1,540.0                               |                                     |                                                       |                                                       |                                          |

a) Record the date  
b) Record the amount of grain dried and the amount of grain received at the facility (tons)  
c) Process specific composite emission factor  
d) Multiply the amount of grain by the emission factor for each process  
e) Calculate using the following equation:  
\[ (e) = \frac{(d)_{\text{dried}} + (d)_{\text{received}}}{2000} \]  
f) Record the Current 12-month PM\(_{10}\) Emissions from last month:  
\[ (h)_{\text{last month}} \]  
g) Record the Monthly PM\(_{10}\) Emissions from this month last year:  
\[ (e)_{\text{this month last year}} \]  
h) Calculate using the following equation:  
\[ (h) = (f) - (g) + (e) \]

A 12-month rolling total less than 15.0 tons of PM\(_{10}\) indicates compliance with Special Condition 1.A.
APPENDIX A

Abbreviations and Acronyms

% ........... percent
°F ............ degrees Fahrenheit
acfm .......... actual cubic feet per minute
BACT ....... Best Available Control Technology
BMPs ......... Best Management Practices
Btu.......... British thermal unit
CAM ....... Compliance Assurance Monitoring
CAS .......... Chemical Abstracts Service
CEMS ....... Continuous Emission Monitor System
CFR ........ Code of Federal Regulations
CO .......... carbon monoxide
CO₂ ........ carbon dioxide
CO₂e ........ carbon dioxide equivalent
COMS ....... Continuous Opacity Monitoring System
CSR ......... Code of State Regulations
dscf ...... dry standard cubic feet
EIQ ...... Emission Inventory Questionnaire
EP ........ Emission Point
EPA ......... Environmental Protection Agency
EU .......... Emission Unit
fps ........ feet per second
ft ........... feet
GACT ....... Generally Available Control Technology
GHG ........ Greenhouse Gas
gpm .......... gallons per minute
gr ........... grains
GWP ....... Global Warming Potential
HAP .......... Hazardous Air Pollutant
hr .......... hour
hp .......... horsepower
lb .......... pound
lbs/hr ...... pounds per hour
MACT ........ Maximum Achievable Control Technology
μg/m³ ...... micrograms per cubic meter
m/s .......... meters per second
Mgal ........ 1,000 gallons
MW .......... megawatt
MHDR ....... maximum hourly design rate
MMBtu .... Million British thermal units
MMCF ...... million cubic feet
MSDS ...... Material Safety Data Sheet
NAAQS .... National Ambient Air Quality Standards
NESHAPs .......... National Emissions Standards for Hazardous Air Pollutants
NOₓ ........ nitrogen oxides
NSPS ...... New Source Performance Standards
NSR ......... New Source Review
PM .......... particulate matter
PM₂.₅ ...... particulate matter less than 2.5 microns in aerodynamic diameter
PM₁₀ .......... particulate matter less than 10 microns in aerodynamic diameter
ppm ........ parts per million
PSD .......... Prevention of Significant Deterioration
PTE ........ potential to emit
RACT ...... Reasonable Available Control Technology
RAL ........ Risk Assessment Level
SCC .......... Source Classification Code
scfm .......... standard cubic feet per minute
SIC .......... Standard Industrial Classification
SIP ........ State Implementation Plan
SMAL ...... Screening Model Action Levels
SOₓ .......... sulfur oxides
SO₂ .......... sulfur dioxide
tph .......... tons per hour
tpy .......... tons per year
VMT .......... vehicle miles traveled
VOC .......... Volatile Organic Compound
Ms. Miranda Gerard  
Environmental Specialist  
Archer Daniels Midland - Rhineland  
4666 Faries Parkway  
Decatur, IL 62525  

RE: New Source Review Permit - Project Number: 2012-11-043  

Dear Ms. Gerard:  

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 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 and your new source review permit application 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 J Luebbert, at the Department of Natural Resources’ 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  

Susan Heckenkamp  
New Source Review Unit Chief  

SH:jll  

Enclosures  

Enclosures  

Permit Number:  

PAMS File: 2012-11-043
### MISSOURI DEPARTMENT OF NATURAL RESOURCES
#### FOLDER TRANSMITTAL ROUTING SHEET

<table>
<thead>
<tr>
<th>DEADLINE:</th>
<th>Penalty for Missing Deadline: $</th>
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<tr>
<td>Archer Daniels Midland - Rhineland</td>
<td>2012-11-043</td>
</tr>
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<tr>
<th>Originator: J Luebbert</th>
<th>Telephone: 6-3835</th>
<th>Date: 10/1/2013</th>
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<td></td>
</tr>
</tbody>
</table>

**FOR SIGNATURE APPROVAL OF:**
- DNR Director
- DNR Deputy Director
- Division Director
- Division Deputy Director
- Other: Kyra L. Moore

**PROGRAM APPROVAL:**
- Approved by:__________________________
- Program: APCP
- Date:__________________________

- Other Program Approval (Section/Unit):__________________________
- Date:__________________________

**ROUTE TO:**
- DIVISION DIRECTOR APPROVAL:__________________________
- Date:__________________________

- FINANCIAL REVIEW – DIVISION OF ADMINISTRATIVE SUPPORT:
  - DAS Director:__________________________
  - Date:__________________________
  - Fee Worksheet Received By:
    - Accounting:__________________________
    - Budget:__________________________
    - General Services:__________________________
    - Internal Audit:__________________________
    - Purchasing:__________________________
- Date:__________________________
- Comments:__________________________

- LEGAL REVIEW:
  - General Counsel:__________________________
  - Date:__________________________
  - AGO:__________________________
  - Date:__________________________
- Comments:__________________________

- DEPARTMENT DIRECTOR APPROVAL:__________________________
- Date:__________________________

- NOTARIZATION NEEDED

INITIALS/DATE