

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: **092014-003**

Project Number: 2014-04-029
Installation Number: 155-0063

Parent Company: Bunge North America, Inc.

Parent Company Address: 11720 Borman Drive, St. Louis, MO 63146

Installation Name: Bunge North America, Inc.

Installation Address: Riverfront Street, Caruthersville, MO 63830

Location Information: Pemiscot County, S16, T18N, R13E

Application for Authority to Construct was made for:

Installation of two drag conveyors, an elevator leg, a baghouse, and removal of dust suppression requirement. Due to the proximity of the projects, this project will include the previous project (2013-02-007) which replaced the existing grain dryer. 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 - 2 2014

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "Kyrna L. 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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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."

Bunge North America, Inc.
 Pemiscot County, S16, T18N, R13E

1. **Superseding Condition**
 The conditions of this permit supersede all special conditions found in the previously issued construction permit 072013-008 issued by the Air Pollution Control Program.
2. **PM₁₀ Emission Limitation**
 - A. Bunge North America, Inc. shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the grain dryer (EU-6) and the associated grain handling equipment.
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 2.A.
3. **PM Emission Limitation**
 - A. Bunge North America shall emit less than 250.0 tons of PM in any consecutive 12-month period from the entire installation as shown in Table 1.

Table 1: Bunge North America-Caruthersville

Emission Point	Description
EP-1	Truck Receiving (old house pit #1)
EP-2	Truck Receiving (new house pit)
EP-3*	Grain Handling
EP-6	Grain Dryer
EP-7	Grain Loading (barge)
EP-8	Grain Loading (truck)
EP-9	Haul Road
EP-10	Storage Bins (old house)
EP-11	Storage Bins (new house)
EP-12	Truck Receiving (pit #2)
EP-15	Dust Tank

*Emission points EP-4 and EP-5 previously represented grain handling in separate areas of the installation. EP-3 of this project includes all handling at the installation

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SPECIAL CONDITIONS:

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

- B. Attachment B or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 3.A.
4. Control Device Requirement-Baghouse
- A. Bunge North America, Inc. shall control emissions from the equipment listed below using baghouses as specified by the applicant.
 - 1) Truck Receiving (old house pit #1) (EP-1)
 - 2) Truck Receiving (new house pit) (EP-2)
 - 3) The following Internal Handling emission points (EP-3)
 - a) New house basement reclaim
 - b) New house receiving leg
 - c) Old house receiving drag
 - d) Old house leg #1
 - e) Old house leg #2
 - f) Old house leg #3
 - g) Old house gallery drag
 - h) Old house reverse drag
 - i) New wet leg
 - j) Dust tank
 - 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 the 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. Bunge North America, Inc. shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours while the facility is in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty. On days the facility is not operating Bunge North America, Inc. shall note this on the records accordingly.

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SPECIAL CONDITIONS:

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

- E. Bunge North America, Inc. shall maintain a copy of the baghouse manufacturer's performance warranty on site.

- F. Bunge North America, Inc. 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.

- 5. Control Device Requirements – Total Enclosure
 - A. Bunge North America, Inc. shall enclose the following grain handling equipment, for the purpose of maximizing the capture efficiency of particulate matter emissions, with duct work at each drop point.
 - 1) New house distribution reversing drag
 - 2) New house receiving drag
 - 3) New receiving drag
 - 4) New house distribution drag
 - 5) New bin distribution belt
 - 6) New bin reclaim belt
 - 7) New house reclaim drag
 - 8) New house reclaim belt
 - 9) FM reclaim drag
 - 10) Dryer leg
 - 11) Dryer drag
 - 12) Dryer wet drag
 - 13) Grain Receiving (old house pit #1) (EP-1)
 - 14) Grain Receiving (new house pit) (EP-2)
 - 15) New house basement reclaim
 - 16) New house receiving leg
 - 17) Old house receiving drag
 - 18) Old house leg #1
 - 19) Old house leg #2
 - 20) Old house leg #3
 - 21) Old house gallery drag
 - 22) Old house reverse drag
 - 23) New wet leg
 - 24) New drag conveyor

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SPECIAL CONDITIONS:

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

- B. Bunge North America, Inc. personnel shall inspect the enclosures listed in Special Condition 5.A on a quarterly basis for any signs of a leak, based on sight or sound. The results of the inspection shall be recorded along with documentation regarding any necessary corrective action.
6. Record Keeping and Reporting Requirements
- A. Bunge North America, Inc. 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. Bunge North America, Inc. 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: 2014-04-029
Installation ID Number: 155-0063
Permit Number:

Bunge North America, Inc.
Riverfront Street
Caruthersville, MO 63830

Complete: February 1, 2013

Parent Company:
Bunge North America, Inc.
11720 Borman Drive
St. Louis, MO 63146

Pemiscot County, S16, T18N, R13E

REVIEW SUMMARY

- Bunge North America, Inc. has proposed to install two drag conveyors, an elevator leg, a baghouse, and remove the dust suppression requirement found in the previous permit. Due to the proximity of the projects, this project will include the previous project (2013-02-007) which replaced the existing grain dryer.
- HAPs of concern from this process are products of natural gas combustion in the grain dryer. All potential HAPs emissions are below the respective SMALs.
- None of the New Source Performance Standards (NSPS) apply to the installation. *Standards of Performance for Grain Elevators*, 40 CFR Part 60, Subpart DD does not apply to this facility because the total grain storage capacity is less than 2.5 million bushels.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Baghouses will be used to control emissions shown in Special Condition 4. Enclosures will be used to control emissions shown in Special Condition 5.
- 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 for the project remain at minor source levels. Bunge North America has also taken an installation wide 250.0 ton per year PM limit to ensure they are considered a minor source for PM and to avoid PSD review for this project.
- This installation is located in Pemiscot 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 for this review. Modeling standards do not currently exist for PM.
- Emissions testing are not required for the equipment.
- An application for a new amendment to the current Intermediate Operating Permit within 180 days of equipment start up or a new Part 70 Operating Permit application with one year of equipment start-up is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION/PROJECT DESCRIPTION

Bunge North America, Inc. operates a grain elevator located in Caruthersville, Missouri (Pemiscot County) that has a storage capacity of 2.45 million bushels of grain. The installation receives grain by truck and ships grain by barge and truck. In 2001, a construction permit for the addition of a natural gas burner for drying rice was issued for the existing grain dryer. The grain dryer associated with permit number 082001-004 was replaced in 2013 by a larger grain dryer associated with project number 2013-02-007. This facility currently operates under an intermediate operating permit. Potential emissions of PM were not calculated for this installation prior to project number 2013-02-007. During the review of project number 2013-02-007 it was determined that existing non-fugitive PM emissions are above the major source level. Therefore, Bunge North America, Inc. has taken an installation wide 250.0 ton per year PM limit to ensure they are considered a minor source for PM and to avoid PSD review for this project for PM. This installation is considered a synthetic minor source for construction permitting purposes.

Bunge North America, Inc. installed a new grain dryer that is capable of drying up to 10,000 bushels of grain per hour or 300 tons of grain per hour as part of project number 2013-02-007. The grain dryer is fueled by natural gas and has a maximum heat input capacity equal to 56 MMBtu/hr.

Bunge North America, Inc. has proposed to install two new drag conveyors and a grain elevator that will feed the grain dryer. The new equipment is rated at 11,000 bushels of grain per hour or 330 tons of grain per hour. However, the dryer, which is rated at 300 tons of grain per hour, will serve as a bottle neck for this process. The new elevator will be enclosed and routed to a baghouse to control particulate matter. In addition to the conveyors and grain elevator, Bunge North America, Inc. will replace the existing dust tank that receives dust from CD-3 and CD-4, which are both baghouses, with a new dust tank with the same capacity. Bunge North America, Inc. will also replace two existing cyclones (each have an airflow rated at 500 cfm) that feed the dust tank with one bin vent filter with an airflow equal to 950 cfm. The potential to emit for this project assumes continuous operation (8760 hours per year) and includes emissions from the grain dryer as well as the conveyance system associated with the dryer.

In the previous permit, permit number 072013-008, Bunge North America Inc. was required to apply dust suppressant to all grain handled by this installation. However, Bunge North America Inc. has requested that this condition be removed as part of this project.

The following New Source Review permits have been issued to Bunge North America, Inc. from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
082001-004	Additional Grain Dryer Burner
012006-016	Additional Storage, Receiving Pit, and Grain Handling
072013-008	New Grain Dryer

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition:

- Section 9.9.1 *Grain Elevators and Processes*, May 2003,
- Section 11.12 *Concrete Batching*, June 2006
- Section 1.4 *Natural Gas Combustion*, July 1998.
- Section 13.2.2, *Unpaved Roads*, November 2006.

The following table provides an emissions summary for this project. Potential emissions of the dust tank are based on the emission factor from AP-42 Section 11.12 for pneumatically conveying concrete with controls due to the addition of the bin vent filter. This emission factor was selected due to a lack of emission factors for the process. Potential emissions of the installation were calculated as a part of this project to determine if the Bunge North America facility was a major source for PM. This calculation includes all existing emission sources at the site and does not include any limits that have been taken in their most recent Intermediate Operating Permit OP2007-047. Existing actual emissions were taken from the installation's 2013 EIQ. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Conditioned potential emissions of the application account for the voluntary limit equal to 15.0 tons of PM₁₀ per 12-month period. New installation conditioned potential accounts for the facility wide 250.0 ton per 12-month period PM emission limit.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Potential Emissions of the Installation	Existing Actual Emissions (2013 EIQ)	Controlled Potential Emissions of the Application	¹ Conditioned Potential Emissions of the Application	² New Installation Conditioned Potential
PM	25.0	2206.75	N/D	343.28	49.63	<250.0
PM ₁₀	15.0	650.37	1.71	103.74	<15.0	73.68
PM _{2.5}	10.0	98.79	0.171	19.11	2.76	11.19
SOx	40.0	N/A	N/D	0.14	0.14	0.14
NOx	40.0	N/A	N/D	24.05	24.05	24.05
VOC	40.0	N/A	N/D	1.32	1.32	1.32
CO	100.0	N/A	N/D	20.20	20.20	20.20
GHG (CO ₂ e)	100,000	N/A	N/D	29,039	29,039	29,039
GHG (mass)	100.0	N/A	N/D	28,857	28,857	28,857
HAPs	10.0/25.0	N/A	N/D	0.45	0.45	0.45

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

¹Conditioned potential emissions of the application include a 15.0 ton per year PM₁₀ project emission limit to avoid modeling requirements found in 10 CSR 6.060 Section (6). The PM and PM_{2.5} potential emissions were proportionally reduced. The combustion potential emissions from the dryer remained as if operating 8760 hours.

²New installation conditioned potential includes a 250.0 ton per year PM emission limit to ensure this installation is a minor source for PM and to avoid PSD review for this project. The PM₁₀ and PM_{2.5} potential emissions were proportionally reduced. The combustion potential emissions from the dryer remained as if operating 8760 hours.

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 for the project are conditioned below the de minimis level. Potential emissions of PM for the project remain at minor source levels. Bunge North America has also taken an installation wide 250.0 ton per 12-month period PM limit to ensure they are considered a minor source for PM and to avoid PSD review for this project.

APPLICABLE REQUIREMENTS

Bunge North America, Inc. 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 Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-6.405
- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 applies to the storage bin vents but the installation is inherently compliant.

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
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 31, 2013, received February 1, 2013, designating Bunge North America, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment B – PM Compliance Worksheet

Bunge North America, Inc.
 Pemiscot County, S16, T18N, R13E
 Project Number: 2014-04-029
 Installation ID Number: 155-0063
 Permit Number: _____

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)
Month, Year	Grain Handled (tons)		Emission Factor	Monthly Emissions (tons)	Monthly Emissions from Previous Year (tons)	Previous 12 Month Emission Total (tons)	Current 12 Month Emission Total (tons)
<i>EX: 10/2012</i>	<i>Grain Received</i>	<i>100,000</i>	<i>0.288</i>	<i>27.45</i>	<i>11.0</i>	<i>5.0</i>	<i>21.45</i>
	<i>Grain Dried</i>	<i>100,000</i>	<i>0.261</i>				
	Grain Received		0.288				
	Grain Dried		0.261				
	Grain Received		0.288				
	Grain Dried		0.261				
	Grain Received		0.288				
	Grain Dried		0.261				
	Grain Received		0.288				
	Grain Dried		0.261				
	Grain Received		0.288				
	Grain Dried		0.261				

- a) Record the current date. (Month, Year)
- b) Record the amount of grain received this month in the top row and the amount of grain dried in the lower row
- c) PM composite emission factor
- d) Calculate using the following equation: $(d) = (b)^{\text{received}} \times (c)^{\text{received}} / 2000 + (b)^{\text{dried}} \times (c)^{\text{dried}} / 2000$
- e) Record the monthly PM emissions (d) from this month last year.
- f) Record the 12-month total emissions (g) from last month
- g) Calculate the new 12-month PM₁₀ emissions using the following equation. $(g) = (d) + (f) - (e)$

A rolling 12-month total less than 250.0 tons of PM implies compliance with Special Condition 3.A.

APPENDIX A

Abbreviations and Acronyms

%percent	m/s meters per second
°Fdegrees Fahrenheit	Mgal 1,000 gallons
acfmactual cubic feet per minute	MW megawatt
BACT Best Available Control Technology	MHDR maximum hourly design rate
BMPs Best Management Practices	MMBtu Million British thermal units
Btu British thermal unit	MMCF million cubic feet
CAM Compliance Assurance Monitoring	MSDS Material Safety Data Sheet
CAS Chemical Abstracts Service	NAAQS ... National Ambient Air Quality Standards
CEMS Continuous Emission Monitor System	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CFR Code of Federal Regulations	NO_x nitrogen oxides
CO carbon monoxide	NSPS New Source Performance Standards
CO₂ carbon dioxide	NSR New Source Review
CO_{2e} carbon dioxide equivalent	PM particulate matter
COMS Continuous Opacity Monitoring System	PM_{2.5} particulate matter less than 2.5 microns in aerodynamic diameter
CSR Code of State Regulations	PM₁₀ particulate matter less than 10 microns in aerodynamic diameter
dscf dry standard cubic feet	ppm parts per million
EQ Emission Inventory Questionnaire	PSD Prevention of Significant Deterioration
EP Emission Point	PTE potential to emit
EPA Environmental Protection Agency	RACT Reasonable Available Control Technology
EU Emission Unit	RAL Risk Assessment Level
fps feet per second	SCC Source Classification Code
ft feet	scfm standard cubic feet per minute
GACT Generally Available Control Technology	SIC Standard Industrial Classification
GHG Greenhouse Gas	SIP State Implementation Plan
gpm gallons per minute	SMAL Screening Model Action Levels
gr grains	SO_x sulfur oxides
GWP Global Warming Potential	SO₂ sulfur dioxide
HAP Hazardous Air Pollutant	tph tons per hour
hr hour	tpy tons per year
hp horsepower	VMT vehicle miles traveled
lb pound	VOC Volatile Organic Compound
lbs/hr pounds per hour	
MACT Maximum Achievable Control Technology	
µg/m³micrograms per cubic meter	

Mr. Eddie Brooks
Facility Manager
Bunge North America, Inc.
P.O. Box 109
Caruthersville, MO 63830

RE: New Source Review Permit - Project Number: 2014-04-029

Dear Mr. Brooks:

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 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:jl

Enclosures

c: Southeast Regional Office
PAMS File: 2014-04-029

Permit Number: