

STATE OF MISSOURI

PERMIT BOOK



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: 032013-002

Project Number: 2012-12-016  
Installation Number: 107-0018

Parent Company: MFA Incorporated

Parent Company Address: 201 Ray Young Drive, Columbia, MO 65201

Installation Name: MFA Agri Service - Higginsville

Installation Address: 105 West 22nd Street, Higginsville, MO 64037

Location Information: Lafayette County, S1, T49N, R26W

Application for Authority to Construct was made for:

Installation of a new 500 bushel capacity grain receiving pit, a receiving drag conveyor, a bucket elevator, piping and two overhead fill conveyors on the west concrete annex at this facility. All new equipment has a design rate equal to 580.0 tons of grain per hour. 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.

MAR 5 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.

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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."*

MFA Agri Service - Higginsville  
Lafayette County, S1, T49N, R26W

1. Superseding Condition
  - A. The conditions of this permit supersede all special conditions found in the previously issued construction permit numbers 0598-018, 082002-022A, 082002-022, and 082005-015 issued by the Air Pollution Control Program as shown in Table 2.
  
2. PM<sub>10</sub> Emission Limitation
  - A. MFA Agri Service - Higginsville shall emit less than 15.0 tons of PM<sub>10</sub> in any consecutive 12-month period from the entire installation as shown in Table 1.
  
  - 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.

**Table 1: Installation Emission Points**

Emission Point	Description	Pollutant	Control Device
EP-1a	Receiving Pit (East)	Particulate Matter	None
EP-1b	Receiving Pit (West)	Particulate Matter	None
EP-1c	Receiving Pit (South)	Particulate Matter	None
EP-2	Internal Handling	Particulate Matter	Mineral Oil
EP-3a	Grain Dryer	Particulate Matter	Mineral Oil
EP-3b	Grain Dryer	Emissions from Natural Gas Combustion	None
EP-4	Truck Loadout	Particulate Matter	Mineral Oil
EP-5	Rail Loadout	Particulate Matter	Mineral Oil
EP-6	Bulk Weigh Hopper	Particulate Matter	Mineral Oil
EP-11a	Storage Bin (East)	Particulate Matter	Mineral Oil
EP-11b	Storage Bin (West)	Particulate Matter	Mineral Oil
EP-11c	Storage Bin (South)	Particulate Matter	Mineral Oil
TS-1	Grain Receiving	Particulate Matter	None
TS-2	Temporary Storage Pile	Particulate Matter	None
TS-3	Truck Loadout	Particulate Matter	None
TS-4	Haul Road	Particulate Matter	None

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### SPECIAL CONDITIONS:

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

3. Control Device Requirements – Dust Suppression
  - A. MFA Agri Service - Higginsville shall construct and operate a dust suppression system that applies food grade mineral oil approved for direct contact with grain, on all grain processed through the emission points with “mineral oil” listed as a control device as shown in Table 1.
  - B. The dust suppression system shall be constructed, operated, and maintained in accordance with its manufacturer’s specifications.
  - C. MFA Agri Service - Higginsville shall maintain monthly records sufficient to demonstrate compliance with Special Condition 3.B. At minimum the records shall include date, oil application location (e.g. conveyor before dryer), oil name, oil specific gravity, oil usage (gallons), oil usage (pounds), grain processed (pounds), and oil application rate (% weight).
4. Record Keeping and Reporting Requirements
  - A. MFA Agri Service - Higginsville 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. MFA Agri Service - Higginsville 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: 2012-12-016  
Installation ID Number: 107-0018  
Permit Number:

MFA Agri Service - Higginsville  
105 West 22nd Street  
Higginsville, MO 64037

Complete: December 11, 2012

Parent Company:  
MFA Incorporated  
201 Ray Young Drive  
Columbia, MO 65201

Lafayette County, S1, T49N, R26W

REVIEW SUMMARY

- MFA Agri Service - Higginsville has applied for authority to install a new 500 bushel capacity grain receiving pit, a receiving drag conveyor, a bucket elevator, piping and two overhead fill conveyors on the west concrete annex at this facility. All new equipment has a design rate equal to 580.0 tons of grain per hour.
- HAP emissions are expected from the combustion of natural gas in the grain dryer.
- None of the New Source Performance Standards (NSPS) apply to the installation. New Source Performance Standard 40 CFR Part 60 subpart DD: *Standards of Performance of Grain Elevators* does not apply to this installation because the maximum 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.
- Application of mineral oil is being used to control the particulate emissions from the equipment labeled "mineral oil" under the "Control Device" column as shown in Table 1.
- 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<sub>10</sub> are conditioned below the de minimis level. Potential emissions of PM are above the de minimis level but below the major source level.
- This installation is located in Lafayette 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. No modeling

standard currently exists for PM.

- Emissions testing is not required for the equipment.
- No Operating Permit is required for this installation as PM is not considered for Operating Permit applicability.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

MFA Agri Service – Higginsville (herein referred to as MFA) has two sites that are considered one installation. One site is an existing grain elevator and the other is a temporary grain storage structure. The two locations are considered one facility because the majority of the grain to be stored in the temporary storage pile will be processed through the existing grain elevator. An operating permit is not required for this installation because MFA has requested a plant wide limit to not emit more than 15.0 tons of PM<sub>10</sub> in any consecutive 12-month period. The potential to emit from the entire facility was calculated during the review of this permit in order to create accurate composite emission factors.

The following New Source Review permits have been issued to MFA Agri Service - Higginsville from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0598-018	New process Equipment
082002-022	Temporary Storage Pile
082002-022A	Temporary Storage Pile Amendment
082005-015	New Receiving Pit and Storage Pile Relocation

### PROJECT DESCRIPTION

MFA has applied for authority to construct a new 500 bushel capacity grain receiving pit, a drag conveyor, a bucket elevator, piping, and two overhead fill conveyors on the west concrete annex of this facility. All new equipment has an MHDR equal to 580.0 tons of grain per hour. The potential emissions of this project include the emissions from an increased throughput for storage bins, the conveyance system, receiving pits, and truck loading. This project is considered a debottlenecking of the shipping operation because of increased throughput for the storage bins. Therefore, MFA has the capability to receive and ship grain at an increased rate. The conveyance system serves as the bottleneck for each grain operation at this facility. The east receiving area has a conveyance system (EP-2a) that is rated at 290.0 tons per hour. The west receiving and south receiving areas each have a conveyance system (EP-2b and EP-2c respectively) that is rated at 580.0 tons per hour. With the addition of the new receiving pit (EP-1c) and associated equipment, MFA will be capable of receiving and shipping grain at a rate of 1450.0 tons per hour on an annual basis. MFA has requested an emission limitation of 15.0 tons in any consecutive 12 month period for PM<sub>10</sub>. The composite emission factor used for record keeping for grain shipping by rail only includes the emissions from rail shipping (EP-5) and emissions from the bulk weigh hopper (EP-6). The composite emission factors used for record keeping for grain

received at the west receiving pit (EP-1b) and the south receiving pit (EP-1c) were combined because rail shipping and grain drying were not included in either emission factor. Additionally, the two receiving pits (EP-1b,c) share a truck loading area. Grain receiving from the east receiving pit (EP-1a) received a separate composite emission factor for record keeping because it has its own truck loading area. The grain dryer located at this facility will remain bottlenecked. Emissions of particulate matter from the emission points labeled “mineral oil” under the “Control Device” column in Table 1 will be controlled by the application of mineral oil.

### 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. Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006. Emissions associated with the combustion of natural gas in the grain dryer were calculated using AP-42, Section 1.4, *Natural Gas Combustion*, July 1998.

The following table provides an emissions summary for this project. The existing potential emissions shown in Table 3 are from permit number 082005-015. Existing actual emissions were taken from the installation’s 2007 EIQ. The actual emissions from 2007 were used because 2007 is the last year a full EIQ was completed by this facility. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). Potential emissions of the application are based on the controlled potential emissions of the new receiving pit and increased throughput for the storage bins, truck loading, and the conveyance system. The record keeping sheet included with this permit includes separate composite emission factors for the storage pile, grain drying, rail shipping, the grain received at the east facility, and the combination of the grain received at the south and west facilities. Existing potential emissions were calculated in order to create accurate composite emission factors for record keeping purposes. Additionally, the grain drying emission factor only calculates emissions from the grain dryer.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2007 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	200.57	48.99
PM <sub>10</sub>	15.0	<15.0	5.41	57.26	<15.0
PM <sub>2.5</sub>	10.0	N/D	0.84	9.67	2.20
SO <sub>x</sub>	40.0	0.05	N/A	N/A	N/A
NO <sub>x</sub>	40.0	11.65	N/A	N/A	N/A
VOC	40.0	0.23	N/A	N/A	N/A
CO	100.0	2.91	N/A	N/A	N/A
GHG (CO <sub>2</sub> e)	75,000 / 100,000	N/D	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0	N/D	N/A	N/A	N/A
HAPs	10.0/25.0	0.162	N/A	N/A	N/A

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 PM<sub>10</sub> are conditioned below de minimis levels. Potential emissions of PM are above the de minimis level but remain below the major source level.

## APPLICABLE REQUIREMENTS

MFA Agri Service - Higginsville 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.

## 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.

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J Luebbert  
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 December 10, 2012, received December 11, 2012, designating MFA Incorporated as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

## Attachment A – PM<sub>10</sub> Compliance Worksheet

MFA Agri Service - Higginsville  
 Lafayette County, S1, T49N, R26W  
 Project Number: 2012-12-016  
 Installation ID Number: 107-0018  
 Permit Number: \_\_\_\_\_

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)
Month	Receiving Area (tons)		PM <sub>10</sub> Emission Factor (lb/ton)	Monthly PM <sub>10</sub> Emissions (pounds)	Monthly PM <sub>10</sub> Emissions (tons)	Previous Month's 12-Month PM <sub>10</sub> Emissions (tons)	Monthly PM <sub>10</sub> Emissions from Previous Year (tons)	Current 12-Month PM <sub>10</sub> Emissions (tons)
<i>Example 08/2012</i>	<i>South and West</i>	<i>5,000</i>	<i>0.029</i>	<i>145.0</i>	<i>0.546</i>	<i>2.0</i>	<i>1.0</i>	<i>1.546</i>
	<i>Storage Pile</i>	<i>5,000</i>	<i>0.125</i>	<i>625.0</i>				
	<i>East</i>	<i>5,000</i>	<i>0.049</i>	<i>245.0</i>				
	<i>Rail Shipping</i>	<i>5,000</i>	<i>0.0017</i>	<i>8.5</i>				
	<i>Grain Dried</i>	<i>5,000</i>	<i>0.0136</i>	<i>68.0</i>				
	<i>South and West</i>		0.029					
	<i>Storage Pile</i>		0.125					
	<i>East</i>		0.049					
	<i>Rail Shipping</i>		0.0017					
	<i>Grain Dried</i>		0.0136					
	<i>South and West</i>		0.029					
	<i>Storage Pile</i>		0.125					
	<i>East</i>		0.049					
	<i>Rail Shipping</i>		0.0017					
	<i>Grain Dried</i>		0.0136					
	<i>South and West</i>		0.029					
	<i>Storage Pile</i>		0.125					
	<i>East</i>		0.049					
	<i>Rail Shipping</i>		0.0017					
	<i>Grain Dried</i>		0.0136					

- a) Record the current date. (Month, Year)
- b) Record this month's grain processed at each location:  
 South and West: Sum and record all grain received at both receiving pits  
 Storage Pile: Record all grain received at the temporary storage pile  
 East: Record all grain received at the east receiving pit  
 Rail Shipping: Record all grain that is shipped by rail  
 Grain Dried: Record all grain that is dried
- c) PM<sub>10</sub> composite emission factor for each process.
- d) Calculate using the following equation: (d) = (b) x (c).
- e) Calculate using the following equation: (e) = [(d) grain received (South and West) + (d) for grain received (storage pile) + (d) for grain received (east) + (d) for grain shipped by rail + (d) for all grain dried] / 2,000
- f) Record the 12-month PM<sub>10</sub> emissions (h) from last month.
- g) Record the monthly PM<sub>10</sub> emissions (e) from this month last year.
- h) Calculate the new 12-month PM<sub>10</sub> emissions. (h) = (e) + (f) – (g)

**A 12-month rolling total less than 15.0 tons of PM<sub>10</sub> indicates compliance with Special Condition 2.A.**

## 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>	
<b>CFR</b> .....	Code of Federal Regulations	.....	National Emissions Standards for Hazardous Air Pollutants
<b>CO</b> .....	carbon monoxide	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>NSR</b> .....	New Source Review
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM</b> .....	particulate matter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>ppm</b> .....	parts per million
<b>EP</b> .....	Emission Point	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EPA</b> .....	Environmental Protection Agency	<b>PTE</b> .....	potential to emit
<b>EU</b> .....	Emission Unit	<b>RACT</b> .....	Reasonable Available Control Technology
<b>fps</b> .....	feet per second	<b>RAL</b> .....	Risk Assessment Level
<b>ft</b> .....	feet	<b>SCC</b> .....	Source Classification Code
<b>GACT</b> .....	Generally Available Control Technology	<b>scfm</b> .....	standard cubic feet per minute
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Mr. Alan Mahoney  
Safety, Environmental & Regulatory Manager  
MFA Agri Service - Higginsville  
201 Ray Young Drive  
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2012-12-016

Dear Mr. Mahoney:

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 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:jl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2012-12-016

Permit Number: