

STATE OF MISSOURI



PERMIT DOCK

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:

**112013-002**

Project Number: 2013-09-019

Installation Number: 147-0004

Parent Company:

MFA Incorporated

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

Installation Name:

MFA Agri Service - Burlington Junction

Installation Address:

1101 West Main Street, Burlington Junction, MO 64428

Location Information:

Nodaway County, S16, T65N, R37W

Application for Authority to Construct was made for:

Installation of four hopper bottom bins with a rated capacity of 3,000 bushels each, a 65 foot fill conveyor, a weigh hopper, a reclaim conveyor, and a seed blender. 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.

NOV - 4 2013

EFFECTIVE DATE

Handwritten signature of Kymberly Moore in cursive.

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.

Page No.	3
Permit No.	
Project No.	2013-09-019

**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 - Burlington Junction  
Nodaway County, S16, T65N, R37W

1. PM<sub>10</sub> Emission Limitation
  - A. MFA Agri Service - Burlington Junction 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.

Table 1: Emission Units

Emission Unit	Description	Bottlenecked MHDR (tons)
EU-01	Fertilizer Receiving	45.0
EU-02	Fertilizer Weigh Hopper	45.0
EU-03	Fertilizer Loadout	45.0
EU-04	Grain Receiving	360.0
EU-05	Internal Grain Handling	360.0
EU-06	Grain Loadout (truck)	360.0
EU-08	Grain Storage Bin	360.0
EU-09	Fertilizer Storage	45.0
EU-10	Fertilizer Mixer	45.0
EU-12	Feed Receiving	36.0
EU-13	Feed Storage	36.0
EU-14	Feed Shipping	36.0
EU-S1	Bulk Seed Receiving	24.0
EU-S2	Seed Conveyor	24.0
EU-S3	Bulk Seed Filling	24.0
EU-S4	Seed Weigh Hopper	24.0
EU-S5	Seed Blender	24.0
EU-S6	Seed Loadout	24.0

- 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 Conditions 1.A.

Page No.	4
Permit No.	
Project No.	2013-09-019

## SPECIAL CONDITIONS:

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

2. Seed Treatment Limitation
  - A. MFA Agri Service - Burlington Junction shall limit the amount of seed treated with fungicide, herbicide, pesticide, and inoculant to less than 2,000.0 tons in any consecutive 12-month period.
  - 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 2.A.
3. Use of Alternative Seed Treatment
  - A. When using an alternative seed treatment for the installation that is different than the material listed in the Application for Authority to Construct, MFA Agri Service - Burlington Junction shall calculate the potential emissions of all individual HAP in the alternative material, based on the seed treatment limitation of Special Condition 2.A.
  - B. Upon request from Missouri Department of Natural Resources' personnel, MFA Agri Service - Burlington Junction shall submit the results of the calculation required by Special Condition 3.A. to the Department of Natural Resources personnel within 30 days of request.
  - C. In cases where the potential individual HAP emissions for the alternative seed treatment is above the SMAL for any chemical, West Central Agri Service – Centerview shall submit an application for Authority to Construct to the Air Pollution Control Program.
4. Operational Requirement

MFA Agri Service - Burlington Junction shall keep the fungicides, pesticides, inoculants, liquid fertilizers, and herbicides in sealed containers whenever the materials are not in use. MFA Agri Service - Burlington Junction shall provide and maintain suitable, easily read, permanent markings on all of the above containers.
5. Record Keeping and Reporting Requirements
  - A. MFA Agri Service - Burlington Junction shall maintain all records required by this permit for not less than five years and shall make them available immediately (excluding the records required by Special Condition 3) to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used.

Page No.	5
Permit No.	
Project No.	2013-09-019

**SPECIAL CONDITIONS:**

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

- B. MFA Agri Service - Burlington Junction shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 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: 2013-09-019  
Installation ID Number: 147-0004  
Permit Number:

MFA Agri Service - Burlington Junction  
1101 West Main Street  
Burlington Junction, MO 64428

Complete: September 12, 2013

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

Nodaway County, S16, T65N, R37W

REVIEW SUMMARY

- MFA Agri Service - Burlington Junction has applied for authority to install four hopper bottom bins with a storage capacity of 3,000 bushels each, a 65 foot fill conveyor, a weigh hopper, a reclaim conveyor, and a seed blender.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are from the seed treatments (toluene and ethylene glycol).
- None of the New Source Performance Standards (NSPS) apply to the installation. 40 CFR Part 60 Subpart DD: *Standards of Performance for Grain Elevators* does not apply to this installation because the total storage capacity is below 2.5 million bushels. According to Missouri Department of Agriculture Grain Dealer Database, the total capacity of this facility is equal to 432,000 bushels.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- Particulate emissions from this installation will be controlled by building enclosures.
- 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 remain below the major source level.
- This installation is located in Nodaway 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.
- Approval of this permit is recommended with special conditions.

### INSTALLATION/PROJECT DESCRIPTION

MFA Agri Service - Burlington Junction is a grandfathered facility that will install new hopper bottom bins for bulk seed storage. MFA Agri Service - Burlington Junction is a minor source since emissions of PM are above the de minimis level but below the major source level. MFA Agri Service - Burlington Junction has requested a voluntary limitation on PM<sub>10</sub> emissions to the de minimis level of fifteen tons per year. An operating permit is not required for this facility.

MFA Agri Service - Burlington Junction is located at 1101 West Main Street, Burlington Junction, MO 64428. The facility is in Nodaway County. The facility consists of an existing grain elevator, dry fertilizer handling, feed storage, and the proposed seed coating operation. MFA Agri Service - Burlington Junction formerly sold bagged seed at this facility.

No permits have been issued to MFA Agri Service - Burlington Junction from the Air Pollution Control Program.

MFA Agri Service - Burlington Junction has proposed to install four hopper bottom bins that have a storage capacity equal to 3,000 bushels each. In addition to the bins, the facility will install a new fill conveyor, a weigh hopper, reclaim conveyors, a seed blender, and associated loadout equipment. Bulk seed will be received, treated, stored, and shipped at this facility. The conditioned potential VOC and HAP emissions from the seed treatment application were based on a 2,000 ton 12-month rolling throughput limit as stated in Special Condition 2.A. According to MFA Agri Service - Burlington Junction, the amount of seed treated in a year rarely exceeds 1,000 tons. Therefore, a 12-month rolling throughput limit equal to 2,000 tons of seed treated will ensure the facility will not exceed the seed treatment limit and proves through potential emissions calculations that the facility will not exceed the de minimis level. All VOCs and HAPs contained within the seed treatment are assumed to be fugitive. Emissions of PM<sub>10</sub> for the entire facility are restricted below the de minimis level of fifteen tons per year. The seed blender is rated at 24 tons per hour which will serve as the bottleneck of the seed treatment system (EU-S5). The fertilizer mixer (EP-10) is rated at 45 tons per hour which will serve as the bottleneck of the fertilizer handling system.

## EMISSIONS/CONTROLS EVALUATION

The emission factors and control efficiencies 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. The emission factor for fertilizer handling was obtained from the EPA website for search and retrieval of emission factors, WebFIRE. Emissions from the storage bins and weigh hopper filling were calculated using the storage bin vent emission factors for a grain elevator. Seed treatment particulate emissions were calculated using the internal handling emission factor. Seed coating material formulas and contents change from year to year in order to identify and decrease the effect of the most prevalent fungi and insects. Therefore VOC contents of seed treatments are not always located on the MSDS. MFA Agri Service - Burlington Junction estimates that the maximum amount of seed treated in any given year is about 1,000 tons. Therefore, MFA Agri Service - Burlington Junction has requested a voluntary limit of 2,000.0 tons of seed treated in any 12-month period as shown in Special Condition 2.A. This demonstrates that MFA Agri Service - Burlington Junction will not exceed the 40.0 ton VOC de minimis level in any consecutive 12-month period.

VOC emissions are calculated based on a mass balance approach. The maximum application rate, VOC content, and specific gravity of all seed treatments submitted with the Application for Authority to Construct are 5 ounces per 100 pounds of seed treated, 25%, and 1.295 respectively. In order to remain conservative, the potential to emit VOC was calculated using an application rate of 10 ounces per 100 pounds of seed treated, VOC content equal to 100%, and a specific gravity equal to 1.35. Using this method, the potential to emit VOC is equal to 17.6 tons. While this method is a conservative overestimation, it demonstrates that actual VOC emissions will not exceed the de minimis level. If the application rate of seed treatment does not exceed 5 ounces per 100 pounds of seed treated, the potential to emit individual HAPs will remain below the major source levels of 10.0 tons of individual HAP and 25.0 tons of total HAPs.

The following table provides an emissions summary for this project. Existing potential emissions were calculated for this project. Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the emission units associated with the installation of the seed 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 (2012 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	952.68	N/D	60.6	43.32
PM <sub>10</sub>	15.0	328.65	2.53	22.15	<15.0
PM <sub>2.5</sub>	10.0	50.05	0.35	3.67	2.3
SO <sub>x</sub>	40.0	N/A	N/D	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/D	N/A	N/A
VOC	40.0	N/A	N/D	17.6	17.6
CO	100.0	N/A	N/D	N/A	N/A
GHG (CO <sub>2</sub> e)	100,000	N/A	N/D	N/A	N/A
GHG (mass)	0.0 / 250.0	N/A	N/D	N/A	N/A
HAPs	10.0/25.0	N/A	N/D	8.8	8.8

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 remains below the major source level.

### APPLICABLE REQUIREMENTS

MFA Agri Service - Burlington Junction 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

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 applies to this facility 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.

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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 September 10, 2013, received September 12, 2013, 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.
- WebFIRE (Factor Information Retrieval System), EPA's online emission factor repository.

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

MFA Agri Service - Burlington Junction

Nodaway County, S16, T65N, R37W

Project Number: 2013-09-019

Installation ID Number: 147-0004

Permit Number: \_\_\_\_\_

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)
Month	Product Received (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)
Example 08/2012	Grain	10,000	0.18	1,800	1.108	2.0	1.0	2.108
	Feed	1,000	0.056	56				
	Fertilizer	1,000	0.148	148				
	Seed	1,000	0.211	211				
	Grain		0.18					
	Feed		0.056					
	Fertilizer		0.148					
	Seed		0.211					
	Grain		0.18					
	Feed		0.056					
	Fertilizer		0.148					
	Seed		0.211					
	Grain		0.18					
	Feed		0.056					
	Fertilizer		0.148					
	Seed		0.211					
	Grain		0.18					
	Feed		0.056					
	Fertilizer		0.148					
	Seed		0.211					

- (a) Record the date
- (b) Record the amount of grain received at the grain receiving pit, the amount of feed received, the amount of fertilizer received, and the amount of seed received
- (c) Emission factor for each process
- (d) Calculate using the following equation:  $(d) = (b) \times (c)$
- (e) Calculate using the following equation:  $(e) = ((d)_{\text{Grain}} + (d)_{\text{Feed}} + (d)_{\text{Fertilizer}} + (d)_{\text{Seed}}) / 2000$
- (f) Record the 12-month PM<sub>10</sub> emissions from last month:  $(h)_{\text{last month}}$
- (g) Record the emissions from this month last year
- (h) Calculate using the following equation:  $(h) = (e) + (f) - (g)$

A 12-month rolling total less than 15.0 tons of PM<sub>10</sub> indicates compliance with Special Condition 1.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 - Burlington Junction  
201 Ray Young Drive  
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2013-09-019

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: 2013-09-019

Permit Number: