

# 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: 012011-009

Project Number: 2010-11-069

Installation Number: 027-0045

Parent Company: MFA Incorporated

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

Installation Name: MFA Agri Service - Cedar Creek

Installation Address: 2887 County Road 269, Columbia, MO 65202

Location Information: Callaway County, S11, T48N, R11W

Application for Authority to Construct was made for:

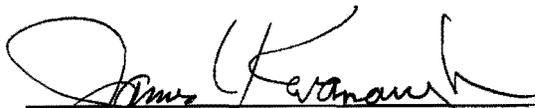
Seed handling and treatment, and re-permitting of an existing fertilizer depot. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

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

JAN 11 2011

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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Permit No.	
Project No.	2010-11-069

#### 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 - Cedar Creek  
Callaway County, S11, T48N, R11W

1. **Superseding Condition**  
The conditions of this permit supersede all Special Conditions found in the previously issued Construction Permit 0299-018 issued by the Air Pollution Control Program.
2. **Emission Limitation**
  - A. MFA Agri Service - Cedar Creek shall emit less than 15.0 tons of particulate matter less than ten microns in diameter (PM<sub>10</sub>) in any consecutive 12-month period from the entire installation (see Table 2).
  - 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. **Operational Requirement**  
MFA Agri Service - Cedar Creek shall keep fungicides, pesticides, inoculants, liquid fertilizers, and herbicides in sealed containers whenever the materials are not in use. MFA Agri Service - Cedar Creek shall provide and maintain suitable, easily read, permanent markings on all fungicide, pesticide, inoculant, liquid fertilizer, and herbicide containers used with this equipment.
4. **Record Keeping and Reporting Requirements**
  - A. MFA Agri Service - Cedar Creek 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. These records shall include Material Safety Data Sheets (MSDS) for all materials used.
  - B. MFA Agri Service - Cedar Creek 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 shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2010-11-069  
Installation ID Number: 027-0045  
Permit Number:

MFA Agri Service - Cedar Creek  
2887 County Road 269  
Columbia, MO 65202

Complete: November 26, 2010

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

Callaway County, S11, T48N, R11W

REVIEW SUMMARY

- MFA Agri Service - Cedar Creek has applied for authority to construct Seed handling and treatment; repermitting existing fertilizer depot.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. The HAP of concern is ethylene glycol (CAS 107-21-1) from liquid fungicide Maxim 4FS.
- None of the New Source Performance Standards (NSPS) apply to the installation. NSPS Subpart DD, "*Standards of Performance for Grain Elevators*" and NSPS Subpart X "*Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities*" do not apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- Building enclosure for fertilizer storage bays (EU-02), fertilizer mixing (EU-03), seed weigh hopper (EU-08), seed conveying (EU-09), and seed treatment (EU-10) is being used to control the particulate matter emissions from the equipment in this permit.
- 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 conditioned to minor source levels.
- This installation is located in Callaway County, an attainment area for all criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of PM<sub>10</sub> are below the de minimis level. Ambient air quality modeling was not performed for PM since there is not a standard.
- 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 DESCRIPTION

MFA Incorporated operates an agri service and fertilizer depot on County Road 269 approximately ten miles east of Columbia, Missouri. The installation is referred to as MFA Agri Service – Cedar Creek. The installation does not currently store grain. Once this permit is issued the grain storage capacity will be 12,000 bushels. Therefore the installation is not defined as a grain terminal elevator under NSPS Subpart DD, “*Standards of Performance for Grain Elevators*”. The installation does not include a wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant. Therefore the installation is not defined as a grain storage elevator under NSPS Subpart DD. The installation stores fertilizer, but does not store fresh granular triple superphosphate. Therefore, NSPS Subpart X, “*Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities*” does not apply.

MFA is a de minimis source under construction permits and does not have an operating permit. The following permits have been issued to MFA Agri Service - Cedar Creek from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0299-018	Fertilizer depot

Table 2: Installation Emission Units

Emission Unit	Description	<sup>1</sup> Maximum Hourly Design Rate – Annual Basis (tons per hour)
Fertilizer		
1	Fertilizer receiving	48
2	Storage bays	48
3	Mixing	48
4	Shipping	48
5	Unpaved haul road	48
Seed		
6	Hopper bottom seed receiving	36
7	Bin vent	36
8	Handling, conveying	36
9	Weigh hopper	36
10	Treatment	36
11	Shipping	36
5a	Unpaved haul road	36

<sup>1</sup> Design rate for seed assumes bulk density of 60 pounds per bushel.

## PROJECT DESCRIPTION

MFA is installing soybean seed handling and treating equipment. Soybean seed will be delivered, stored, weighed, treated, and shipped. Treatment options include fungicides, insecticides, or inoculants. Seed receiving is rated at 60 tons per hour. Seed treatment and handling is rated at 36 tons per hour. On an annual basis the seed equipment is bottlenecked to 36 tons per hour for each emission unit.

Clean seed will be delivered via semi truck and trailer and unloaded to one of four 3,000 bushel hopper bottom bins using a new conveyor system. The bins do not have vents, but have tops that are open during filling. Stored seed will be transferred via conveyor to a weigh hopper, treatment mixer, and finally to load-out. MFA will have the capability to bypass the bins and load seed directly into the weigh hopper. Also, they will have the capability to bypass the treatment step and load-out seed without being treated. However, the greatest potential to emit would include all steps, and without placing limits on the amount of seed received or treated, project emissions include all seed processed through all steps.

Seed can be treated with any fungicide, insecticide, or inoculant, namely Apron Maxx RFC, Maxim 4FS, Cruiser Maxx, Optimize, or Accelron HX-209. Only one treatment will be used per batch of seed. The greatest potential volatile organic compound (VOC) emissions are from Cruiser Maxx. The greatest potential hazardous air pollutant (HAP) emissions are from Maxim 4FS. Most treatments are liquids, but are not considered a control device for particulate, HAP, or VOC emissions. The treatment building is considered a control device for particulate matter.

MFA has requested an installation wide de minimis PM<sub>10</sub> limit. Potential emissions from the fertilizer emission units were recalculated and are included in the project.

## EMISSIONS/CONTROLS EVALUATION

Received seed is considered cleaner than grain received at an elevator; therefore, the emission factors for receiving at an animal feed mill were cited from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1, *Grain Elevators and Processes*, May 2003. 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 treatment VOC and HAP emissions were calculated on a greatest potential to emit per pollutant basis. Maxim 4FS contains ethylene glycol, a HAP. Potential emissions were calculated assuming all available ethylene glycol emitted. Cruiser Maxx contains three percent VOCs, cited from the manufacturer Syngenta.

Haul road emissions were calculated using AP-42, Section 13.2.2, *Unpaved Roads*, November 2006. Treated seed haul road emissions were calculated for the greatest potential to emit. Treated seed will be packaged in tender boxes, one ton bulk bags, or fifty pound bags that will be purchased by farmers. The greatest potential to emit was calculated assuming smaller capacity vehicles and higher numbers (pickup trucks and trailers) instead of larger capacity vehicles in fewer numbers (semi trucks and trailers).

Existing fertilizer processes were evaluated for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. PM<sub>2.5</sub> emission factors do not exist for fertilizer handling, therefore the PM<sub>2.5</sub> emission factor (0.005 pounds per ton of fertilizer) was estimated as being 25 percent of the PM<sub>10</sub> emission factor (0.02 pounds per ton of fertilizer, SCC 30102709).

Potential emissions of the application represent the potential of the new seed equipment and re-evaluated fertilizer equipment, assuming continuous operation (8,760 hours per year). The new installation conditioned potential represents a voluntary PM<sub>10</sub> emission limit, with other emissions proportionately reduced. The following table provides an emissions summary for this project.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	<sup>1</sup> Existing Potential Emissions	Existing Actual Emissions (2009 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM <sub>2.5</sub>	10.0	N/D	N/D	9.79	2.41
PM <sub>10</sub>	15.0	2.87	N/D	60.98	< 15.0
PM	25.0	N/D	N/D	154.76	38.07
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	17.92	4.41
CO	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	1.71	0.42

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

<sup>1</sup> Existing potential emissions from ambient impact analysis performed under permit 0299-018.

## 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 the de minimis level. Potential emissions of PM are conditioned to minor source levels.

## APPLICABLE REQUIREMENTS

MFA Agri Service - Cedar Creek 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. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of a hardcopy Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions. Alternatively, submission of an electronic EIQ via MoEIS is required May 1.
- *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

## 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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David Little  
Environmental Engineer

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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 November 24, 2010, received November 26, 2010, 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.
- Northeast Regional Office Site Survey, dated December 14, 2010.

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

MFA Agri Service - Cedar Creek  
 Callaway County, S11, T48N, R11W  
 Project Number: 2010-11-069  
 Installation ID Number: 027-0045  
 Permit Number: \_\_\_\_\_

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

	(a)	(b)	(c)
Step Description	Monthly Throughput (tons)	Composite Emission Factor (lb/ton)	Monthly PM <sub>10</sub> Emissions (lbs)
Fertilizer Received		0.1155	
Seed Received		0.2327	
(d) Total Monthly PM <sub>10</sub> Emissions (lbs)			
(e) Total Monthly PM <sub>10</sub> Emissions (tons)			
(f) 12-Month PM <sub>10</sub> Emissions (h) from Previous Month's Attachment A (tons)			
(g) Total Monthly PM <sub>10</sub> Emissions (e) from Previous Year's Attachment A (tons)			
(h) Current 12-Month PM <sub>10</sub> Emissions (tons) (h) = [(e) + (f) – (g)]			

- (a) Record this month's throughput.
- (c) Multiply the Monthly Throughput (a) by the respective Composite Emission Factor (b).
- (d) Sum each individual Monthly PM<sub>10</sub> Emissions.
- (e) Divide the Total Monthly PM<sub>10</sub> Emissions (d) by 2,000.
- (f) Record the 12-Month PM<sub>10</sub> Emissions (h) from the Previous Month's Attachment A.
- (g) Record the Total Monthly PM<sub>10</sub> Emissions (e) from the Previous Year's Attachment A.
- (h) Calculate the Current 12-Month PM<sub>10</sub> Emissions. A total less than 15.0 tons indicates compliance.

Mr. Alan Mahoney  
SER Manager  
MFA Incorporated  
201 Ray Young Drive  
Columbia, MO 65201

RE: New Source Review Permit - Project Number: 2010-11-069

Dear Mr. Mahoney:

Enclosed with this letter is your permit to construct. Please study it carefully. 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 David Little at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
New Source Review Unit Chief

KBH:dlk

Enclosures

c: Northeast Regional Office  
PAMS File: 2010-11-069

Permit Number: