



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: 032014-001 Project Number: 2014-01-002
Installation Number: 141-0003

Parent Company: MFA Inc.

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

Installation Name: MFA Agri Services Versailles

Installation Address: 13148 Hwy 52, Versailles, MO 65084

Location Information: Morgan County, S32, T43N, R17W

Application for Authority to Construct was made for:

A new 500 ton bulk dry fertilizer plant located in Versailles, Missouri. 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 - 3 2014

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 startup 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 startup 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 Services Versailles
Morgan County, S32, T43N, R17W

1. PM₁₀ Emission Limitation
 - A. MFA Agri Services Versailles shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the entire installation as shown in Table 1.

Table 1: Emission points of installation.

Emission Point	Description	True MHDR (tons/hr)	Bottleneck MHDR (tons/hr)
EP-1	Grain/Feed Receiving	90	90
EP-2	Handling	90	90
EP-3	Storage Bin Vents	90	90
EP-4	Rollermill	4	4
EP-5	Grinder	9	8
EP-6	Mixer	12	12
EP-7	Grain Loadout	90	90
EP-8	Feed Loadout	12	12
EP-9	Fertilizer Receiving	60	45
EP-10	Inclined Conveyor	60	45
EP-11	Storage Bay	60	45
EP-12	Mixer	45	45
EP-13	Belt Conveyor	45	45
EP-14	Loadout	45	45
EP-15	Haul Road – Grain Rec.	90	90
EP-16	Haul Road – Grain Ship.	90	90
EP-17	Haul Road – Fert. Rec.	45	45
EP-18	Haul Road – Fert. – Ship	45	45
EP-19	Haul Road – Bucket Loader	45	45

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SPECIAL CONDITIONS:

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

- 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 1.A.
2. Record Keeping and Reporting Requirements
- A. MFA Agri Services Versailles 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 Services Versailles 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: 2014-01-002
Installation ID Number: 141-0003
Permit Number:

MFA Agri Services Versailles
13148 Hwy 52
Versailles, MO 65084

Complete: January 6, 2014

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

Morgan County, S32, T43N, R17W

REVIEW SUMMARY

- MFA Agri Services Versailles has applied for authority to construct a new 500 ton bulk dry fertilizer plant located at 13148 Highway 52 in Versailles, Missouri.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- 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 the de minimis level. Potential emissions of PM exceed the de minimis level but remains below the major source level.
- This installation is located in Morgan 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 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 DESCRIPTION

The existing operation of MFA Agri Service –Versailles, plant ID 141-0003, consists of feed processing, grain storage, grain handling, and retail sales operations. The permit for this operation was issued on April 26, 1977, under the fugitive dust classification. Materials are received through a dump pit, which is located in a driveway building. A bucket elevator transports the material to storage bins. The material is processed through a roller mill and a grinder (hammermill) and sent to mixing scales. A bucket elevator then distributes the material to overhead bins for the loading of trucks.

The following New Source Review permit has been issued to MFA Agri Services Versailles from the Air Pollution Control Program.

Table 2: Permit History

Permit Number	Description
0577-003	Feed processing, grain storage, grain handling, and retail sales operation.

PROJECT DESCRIPTION

MFA Agri Service – Versailles has proposed construction of a 500 ton bulk dry fertilizer plant. This facility will be located at the current MFA Agri Service – Versailles at 13148 Highway 52, installation ID 141-0003, where grain and feed operations exist. The new facility will consist of a concrete floor with concrete divider walls and a rear wall extending up four feet with wooden stud construction, with a wooden roof deck, covered by asphalt shingles. There will be a new receiving chain-belt conveyor feeding a new overhead fill auger. The product will be moved to the vertical mixer by bucket loader and loaded out using a new belt conveyor. The receiving system is rated at 60 tons per hour, but the load-out due to the batch nature will be rated at no more than 45 tons per hour. The maximum mixing rate of the material will be 45 tons per hour, which will be a bottleneck for the system. The products received will include urea, monoammonium Phosphate (MAP), potash, ammonium sulfate, and triple superphosphate (TSP). The shipped product will be fertilizer. A building enclosure will capture particulate matter emissions from the fertilizer plant.

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. PTE for feed processes were calculated using emission factors for grain receiving, handling, storage, mixing, milling, and shipping. Haul road emissions were calculated using the method recommended in AP-42 Section 13.2.2 *Unpaved Roads*, November 2006. In order to remain conservative, each haul road PTE was calculated under the assumption that all grain

receiving and shipping operations will be carried out by straight trucks. PTE for haul roads were calculated under the assumption that the unpaved road silt content is 8.3%.

The fertilizer processes were evaluated using emission factors obtained from WebFIRE (Factor Information Retrieval System), EPA’s online emission factor repository. PM_{2.5} emission factors do not exist for fertilizer handling. The emission factor (0.02 pounds per ton of fertilizer, SCC 3-01-027-09) was used for PM, PM₁₀, and PM_{2.5}. According to MFA Incorporated, hopper trucks will primarily be used for receiving fertilizer materials and straight trucks will primarily be used for shipping the fertilizer product. Thus, haul roads for the fertilizer plant were calculated with 50% hopper trucks and 50% straight trucks being used in shipping and receiving.

The following table provides an emissions summary for this project. Existing potential emissions were calculated for this project. Existing actual emissions were not available from the Missouri Emissions Inventory System (MOEIS). The actual emissions were provided by MFA Agri Service –Versailles and calculated using the highest throughput from the previous five years. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year).

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011*)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	358.1273	2.27	77.0327	45.93
PM ₁₀	15.0	103.9536	1.07	38.1464	<15.00
PM _{2.5}	10.0	22.4924	0.63	26.3176	4.94
SOx	40.0	N/A	N/A	N/A	N/A
NOx	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	100,000	N/A	N/A	N/A	N/A
GHG (mass)	100.0	N/A	N/A	N/A	N/A
HAPs	10.0/25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

* Actual Emissions were provided by MFA Agri Service – Versailles.

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 are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

MFA Agri Services Versailles 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.

Bryce Mihalevich
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 6, 2014, received January 6, 2014, designating MFA Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A – PM₁₀ Compliance Worksheet

MFA Agri Services Versailles
 Morgan County, S32, T43N, R17W
 Project Number: 2014-01-002
 Installation ID Number: 141-0003
 Permit Number: _____

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

(a)	(b)		(c)	(d)	(e)	(f)	(g)	(h)
Month	Materials Handled (tons)		PM ₁₀ Emission Factor (lb/ton)	Monthly PM ₁₀ Emissions (pounds)	Monthly PM ₁₀ Emissions (tons)	Previous Month's 12-Month PM ₁₀ Emissions (tons)	Monthly PM ₁₀ Emissions from Previous Year (tons)	Current 12-Month PM ₁₀ Emissions (tons)
<i>Example 08/2012</i>	<i>Feed Shipped</i>	<i>5,000</i>	<i>0.2371</i>	<i>1,185.5</i>	<i>1.657</i>	<i>5.0</i>	<i>1.0</i>	<i>5.657</i>
	<i>Grain Received</i>	<i>5,000</i>	<i>0.2321</i>	<i>1,160.5</i>				
	<i>Fertilizer Received</i>	<i>5,000</i>	<i>0.1936</i>	<i>960.0</i>				
	<i>Feed Shipped</i>		<i>0.2371</i>					
	<i>Grain Received</i>		<i>0.2321</i>					
	<i>Fertilizer Received</i>		<i>0.1936</i>					
	<i>Feed Shipped</i>		<i>0.2371</i>					
	<i>Grain Received</i>		<i>0.2321</i>					
	<i>Fertilizer Received</i>		<i>0.1936</i>					
	<i>Feed Shipped</i>		<i>0.2371</i>					
	<i>Grain Received</i>		<i>0.2321</i>					
	<i>Fertilizer Received</i>		<i>0.1936</i>					
	<i>Feed Shipped</i>		<i>0.2371</i>					
	<i>Grain Received</i>		<i>0.2321</i>					
	<i>Fertilizer Received</i>		<i>0.1936</i>					

- a) Record the current date.
- b) Record this month's feed shipped, feed received, and fertilizer received
- c) Composite PM₁₀ emission factor for each process.
- d) Calculate using the following equation: (d) = (b) x (c)
- e) Calculate using the following equation: (e) = [(d) feed received + (d) grain receiving + (d) fertilizer received] / 2,000
- f) Record the 12-month PM₁₀ emissions (h) from last month.
- g) Record the monthly PM₁₀ emissions (e) from this month last year.
- h) Calculate the new 12-month PM₁₀ emissions using the following equation: (h) = (e) + (f) – (g)

A rolling 12-month total (h) less than 15.0 tons indicates compliance with Special Condition 1.A.

APPENDIX A

Abbreviations and Acronyms

%	percent	m/s	meters per second
°F	degrees Fahrenheit	Mgal	1,000 gallons
acfm	actual 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	
CFR	Code of Federal Regulations	National Emissions Standards for Hazardous Air Pollutants
CO	carbon monoxide	NO_x	nitrogen oxides
CO₂	carbon dioxide	NSPS	New Source Performance Standards
CO_{2e}	carbon dioxide equivalent	NSR	New Source Review
COMS	Continuous Opacity Monitoring System	PM	particulate matter
CSR	Code of State Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
dscf	dry standard cubic feet	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
EQ	Emission Inventory Questionnaire	ppm	parts per million
EP	Emission Point	PSD	Prevention of Significant Deterioration
EPA	Environmental Protection Agency	PTE	potential to emit
EU	Emission Unit	RACT	Reasonable Available Control Technology
fps	feet per second	RAL	Risk Assessment Level
ft	feet	SCC	Source Classification Code
GACT	Generally Available Control Technology	scfm	standard cubic feet per minute
GHG	Greenhouse Gas	SIC	Standard Industrial Classification
gpm	gallons per minute	SIP	State Implementation Plan
gr	grains	SMAL	Screening Model Action Levels
GWP	Global Warming Potential	SO_x	sulfur oxides
HAP	Hazardous Air Pollutant	SO₂	sulfur dioxide
hr	hour	tph	tons per hour
hp	horsepower	tpy	tons per year
lb	pound	VMT	vehicle miles traveled
lbs/hr	pounds per hour	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		

Mr. Alan Mahoney
Safety, Environmental & Regulatory Manager
MFA Agri Services Versailles
201 Ray Young Drive
Columbia, MO, 65201

RE: New Source Review Permit - Project Number: 2014-01-002

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, 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 Bryce Mihalevich, at the Department of Natural Resources' 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

Susan Heckenkamp
New Source Review Unit Chief

SH:bmh

Enclosures

c: Southwest Regional Office
PAMS File: 2014-01-002

Permit Number: