

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: 07 2 0 1 0 - 0 0 4 Project Number: 2009-11-046

Parent Company: Monsanto Company

Parent Company Address: 800 North Lindbergh Blvd, St. Louis, MO 63167

Installation Name: Monsanto Company

Installation Number: 195-0034

Installation Address: 830 North Miami, Marshall, MO 65340

Location Information: Saline County, S10, T50N, R21W

Application for Authority to Construct was made for the addition of an LMC screen/conveyor (EU-2) to an existing grain storage, conditioning and treatment process. This permit also includes existing equipment to grant an installation-wide de minimis emission limit. This review was conducted in accordance with Section (5), 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.

JUL 14 2010

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 Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). 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 this (these) air contaminant source(s).

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 source(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.	2009-11-046

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."

Monsanto Company
Saline County, S10, T50N, R21W

1. Emission Limitation
 - A. The Monsanto Company shall emit less than 15.0 tons of particulate matter less than ten (10) microns in diameter (PM₁₀) in any consecutive 12-month period from the entire installation (see Table 2).
 - B. The Monsanto Company shall demonstrate compliance with the emission limit in special condition 1.A by recording the 12-month rolling total PM₁₀ emissions. The Monsanto Company shall use electronic forms approved by the Air Pollution Control Program that contain at minimum the following information:
 - 1) Monthly throughput of each emission unit in tons
 - 2) Emission factor for the unit as stated in Attachment A
 - 3) Source of emission factor as stated in Attachment A
 - 4) Control Device
 - 5) Appropriate control efficiencies, which shall not exceed:
 - a.) 80 % for cyclones
 - b.) 99 % for baghouses
 - c.) 90% for hanging bag filters
 - 6) Monthly PM₁₀ emissions for each unit in tons
 - 7) Monthly PM₁₀ emissions for the entire installation in tons
 - 8) 12-month total PM₁₀ emissions for the entire installation in tons
2. Alternative Treatment Solutions
 - A. When considering an alternative treatment solution that is different to those listed in the Application for Authority to Construct, the Monsanto Company must calculate the potential emissions for each individual Hazardous Air Pollutant (HAP) in each alternative treatment solution. If the potential HAP emissions for the alternative solution are less than the Screen Modeling Action Level (SMAL), as listed in Attachment AA, then the Monsanto Company does not need to obtain approval from the Air Pollution Control Program before the use of the alternative treatment

Page No.	4
Permit No.	
Project No.	2009-11-046

SPECIAL CONDITIONS:

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

solution. If the potential HAP emissions for the alternative solution are *equal to or greater* than the SMAL, then the Monsanto Company must obtain approval from the Air Pollution Control Program before use of the alternative treatment solution.

- B. Calculations of alternative solution shall be maintained for five years after the last day the alternative coating is used and shall be made available for Department of Natural Resources' employee on request. The Monsanto Company shall use electronic forms approved by the Air Pollution Control Program that contain at minimum the following information:
- 1) Name of proposed alternative treatment solution
 - 2) Proposed application rate
 - 3) Density of proposed alternative treatment solution in pounds per gallon
 - 4) Individual HAP content in weight percentage
 - 5) Potential individual HAP emissions in tons per year
 - 6) SMAL for each individual HAP in tons per year
3. Control Device Requirement - Baghouse
- A. Monsanto Company shall control PM₁₀ emissions using baghouses as specified in the permit application on the following emission units (EU):
- 1) EU-2: Scalp (LMC screen/conveyor)
 - 2) EU-5: Aspirator
 - 3) EU-6: 17 Bulk Storage Bins (12 x 3,000 bu; 5 x 1,000 bu)
 - 4) EU-7: Cleaner Surge Bin
 - 5) EU-8: Cleaner (Crippen 588)
 - 6) EU-9: Color Sorter Surge Bin
 - 7) EU-10: Color Sorter Primary
 - 8) EU-11: Color Sorter Secondary
- 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 Missouri 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).

Page No.	5
Permit No.	
Project No.	2009-11-046

SPECIAL CONDITIONS:

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

- D. The Monsanto Company shall monitor and record the operating pressure drop across the baghouses at least once per calendar day. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. The Monsanto Company 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.
4. Control Device Requirement - Cyclone
- A. The Monsanto Company shall control emissions using cyclones as specified in the permit application on the following emission units (EU):
 - 1) EU-12: Gravity Surge Bin #1
 - 2) EU-13: Gravity Table #1
 - 3) EU-18: 6 Bagging Bins (2 x 450 bu; 2 x 270 bu; 2 x 250 bu)
 - 4) EU-19: Bemis Bagger Surge Bin
 - 5) EU-20: Bemis Bagger
 - 6) EU-21: Mini Bulk Bagger Surge Bin
 - 7) EU-22: Mini Bulk Bagger
 - B. The cyclones shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Monsanto Company shall maintain an operating and maintenance log for the cyclones 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 Requirement – Hanging Bag Filter
- A. The Monsanto Company shall control emissions using hanging bag filters as specified in the permit application on the following emission units (EU):
 - 1) EU-14: Gravity Surge Bin #2
 - 2) EU-15: Gravity Table #2
 - 3) EU-17: 4 True Bulk Bagging Bins (1,000 bu each)

Page No.	6
Permit No.	
Project No.	2009-11-046

SPECIAL CONDITIONS:

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

- B. The hanging bag filters shall be operated and maintained in accordance with the manufacturer's specifications.
 - C. Replacement hanging bag filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
 - D. The Monsanto Company shall monitor and record the visual inspection of the bag filters and Gravity Table #2 at least once per calendar day. The physical condition shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. The Monsanto Company shall maintain an operating and maintenance log for the bag filters 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.
6. Record Keeping and Reporting Requirements
- A. The Monsanto Company shall maintain all records required by this permit for not less than five (5) 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. The Monsanto Company shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 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.
7. Haul Road Dust Suppression
- A. Monsanto Company shall apply water or another effective suppressant for dust control to all unpaved haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.

Page No.	7
Permit No.	
Project No.	2009-11-046

SPECIAL CONDITIONS:

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

- B. Watering may be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2009-11-046
Installation ID Number: 195-0034
Permit Number:

Monsanto Company
830 North Miami
Marshall, MO 65340

Complete: December 3, 2009

Parent Company:
Monsanto Company
800 North Lindbergh Blvd
St. Louis, MO 63167

Saline County, S10, T50N, R21W

REVIEW SUMMARY

- The Monsanto Company has submitted an Application for Authority to Construct was made for the addition of an LMC screen/ conveyor (EU-2) to an existing grain storage, conditioning and treatment process. This permit also includes existing equipment to grant an installation-wide de minimis emission limit.
- Hazardous Air Pollutants (HAPs) are emitted during the soybean treatment, but individually are less than their respective Screen Model Action Level (SMAL) and collectively are less than the 25.0 tons per year (tpy) de minimis level.
- None of the New Source Performance Standards (NSPS) apply to the installation. 40 CFR 60 Subpart DD, "Standards of Performance for Grain Elevators" does not apply to the equipment because the storage capacity of the grain elevator is less than 2.5 million bushels.
- 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.
- Baghouses, hanging filter bags, and cyclones are being used to control the PM₁₀ emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of PM₁₀ are conditioned below de minimis levels.
- This installation is located in Saline 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.

- An Operating Permit is not required for this installation.
- Emissions testing are not required for the equipment.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

The Monsanto Company operates an existing soybean storage, conditioning and treatment process located at 830 North Miami in Marshall, Missouri of Saline County, which is a minor source. This installation consists of soybean seed receiving, cleaning, sorting, treating, packaging and bulk load out.

The following permits have been issued to Monsanto Company from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
0792-009	Addition of gravity separator

PROJECT DESCRIPTION

This permit is granting authority to the Monsanto Company for the modification of an existing soybean storage, conditioning and treatment process located at 830 North Miami in Marshall, Missouri of Saline County. This permit is specifically for the addition of an LMC screen/ conveyor (EU-2), but also includes existing equipment to grant an installation-wide de minimis emission limit. Table 2 lists emission units of the installation.

Table 2: Emission Unit Summary

Emission Unit	Emission Unit No.	Emission Point No.
Inside Receiving [fugitive]	EU-1	EP-1
Scalp (LMC screen/conveyor)	EU-2	EP-2
Pod Bin [fugitive]	EU-3	EP-3
Pod Bin Loadout [fugitive]	EU-4	EP-4
Aspirator	EU-5	EP-5
17 Bulk Storage Bins (12 x 3,000 bu; 5 x 1,000 bu)	EU-6	EP-5
Cleaner Surge Bin	EU-7	EP-6
Cleaner (Crippen 588)	EU-8	EP-6
Color Sorter Surge Bin	EU-9	EP-7
Color Sorter Primary	EU-10	EP-7
Color Sorter Secondary	EU-11	EP-7
Gravity Surge Bin #1 (3600)	EU-12	EP-8
Gravity Table #1 (Oliver 3600)	EU-13	EP-8
Gravity Surge Bin #2 (160)	EU-14	EP-9
Gravity Table #2 (Oliver 160)	EU-15	EP-9
Treater Drum [fugitive]	EU-16	EP-10

4 True Bulk/ Bagging Bins (1,000 bu each)	EU-17	EP-9
6 Bagging Bins (2 x 450 bu; 2 x 270 bu; 2 x 250 bu)	EU-18	EP-11
Bemis Bagger Surge Bin	EU-19	EP-11
Bemis Bagger	EU-20	EP-11
Mini Bulk Bagger Surge Bin	EU-21	EP-11
Mini Bulk Bagger	EU-22	EP-11
Tower True Bulk Loadout [fugitive]	EU-23	EP-12
Cull Bin (3,000 bu) [fugitive]	EU-24	EP-13
Cull Loadout [fugitive]	EU-25	EP-14
Internal Handling [fugitive]	EU-26	EP-15
Outside Receiving [fugitive]	EU-27	EP-16
30 Outside Storage Bins (24 x 3000 bu; 2 x 2,000 bu; 4 x 1500 bu)	EU-28	EP-17
Outside Storage Loadout - x-fer to Inside Receiving [fugitive]	EU-29	EP-18
Transfer to Outside True Bulk Bins [fugitive]	EU-30	EP-19
17 Outside True Bulk Bins (1100 bu each)	EU-31	EP-20
Outside True Bulk Bins Loadout [fugitive]	EU-32	EP-21
Transfer Mini Bulk to True Bulk [fugitive]	EU-33	EP-22
Haul Roads [fugitive]	EU-34	EP-23

The maximum hourly design rate (MHDR) of the storage, conditioning and treatment process is 60 tons per hours (2000 bushels per hour), which is based upon receiving (EU-1), scalp (EU-2), aspirator (EU-5) and bulk storage (EU-6). Baghouses, hanging filter bags, and cyclones are used to control PM₁₀ emissions. This grain elevator will be powered by electricity. Different treatment solutions are applied to the soybeans – each with its own maximum application rate. The grain elevator has the option of applying all the treatment solutions at the same time; therefore, the potential VOC and HAP emissions from all treatment solutions were summed. The following treatment solutions were evaluated for VOC and HAP emissions: Allegiance FL (also know as Acceleron DX-309), Diamir (also known as Acceleron DX-109), Gaucho 600 (also known as Acceleron IX-409), Color Coat Red Liquid, Color Film Clear, Maxim 4FS, Apron, Custom Color Gloss 661, Cruiser 5FS, and Color Coat Blue Liquid.

HAPs and VOCs are emitted during the soybean treatment, but individually are less than their respective SMAL and collectively are less than the de minimis level for the treatment solutions submitted in the application. If alternative treatment solutions are used, the Monsanto Company must calculate the potential emissions for each individual HAP in the alternative treatment solutions that have a Screen Modeling Action Level (SMAL) as listed in Attachment AA. If the potential HAP emissions for the alternative solution are equal to or greater than the SMAL, then the Monsanto Company must obtain approval from the Air Pollution Control Program before use of the alternative

treatment solution.

EMISSIONS/CONTROLS EVALUATION

The emission factors of soybean storage and handling used in this analysis were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 9.9.1 “Grain Elevators & Processes” (5/2003).

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.1 “Paved Roads,” (11/2006) and AP-42 Section 13.2.2 “Unpaved Roads,” (11/2006).

A mass balance approach was used to determine potential emission from the treatment solutions. One-hundred percent (100%) of all HAP and VOC emissions in the treatment solutions are assumed to be emitted. HAP and VOC emissions of the treatment solutions were calculated from the material safety data sheets, lab testing conducted by the Monsanto Company, and documentation from the chemicals’ manufacturers.

Potential emissions of the application represent the potential of the new and existing equipment, assuming continuous operation (8760 hours per year) with control devices. Table 3 provides an emissions summary for this project. Control efficiencies used were: 99% for baghouses, 80% for cyclones, and 90 % for hanging bag filters.

Table 3: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis/ SMAL Levels	Existing Potential Emissions	Existing Actual Emissions	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	32.72	N/A	32.72	< 15.0
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	12.09	N/A	12.09	N/A
CO	100.0	N/A	N/A	N/A	N/A
Ethylene Glycol	10.0	1.53	N/A	1.53	N/A
TOTAL HAPs	25.0	1.97	N/A	1.97	N/A

N/A = Not Applicable

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

The Monsanto Company 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 an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *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 10-3.090*

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 (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with/without special conditions.

Daronn Williams
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 18, 2009, received November 20, 2009, designating Monsanto Company 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 15, 2009.
- Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Material Safety Data Sheets (MSDS) of the chemicals' manufacturers.
- Lab testing conducted by The Monsanto Company
- Documentation from the chemicals' manufacturers.