

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: 11 2014 - 008

Project Number: 2014-09-048
Installation Number: 021-0132

Parent Company: BASF Corporation

Parent Company Address: 100 Park Avenue, Florham Park, NJ 07932

Installation Name: BASF - St. Joseph

Installation Address: 1305 South 58th Street, St. Joseph, MO 64507

Location Information: Buchanan County, S18, T57N, R34W

Application for Authority to Construct was made for:
The installation of a diesel generator and granular production area. 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.

NOV 17 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."

BASF - St. Joseph
Buchanan County, S18, T57N, R34W

1. Control Device Requirement - Dust Collector
 - A. BASF - St. Joseph shall control emissions from the following equipment using a dust collector, as specified in the permit application.
 - 1) Loading Hopper (EP-02)
 - 2) Loading Elevator (EP-03)
 - 3) Mixer/ Raw Bin (EP-04)
 - 4) Mixing Elevator (EP-05)
 - 5) Mixed Bin (EP-06)
 - 6) Sifters (EP-07)
 - 7) Packaging Bin (EP-08)
 - B. The dust collector shall be operated and maintained in accordance with the manufacturer's specifications. The dust collector 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 Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the dust collector 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. BASF - St. Joseph shall monitor and record the operating pressure drop across the dust collector at least once every 24 hours while the granular production process is operating. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. BASF - St. Joseph shall maintain a copy of the dust collector manufacturer's performance warranty on site.

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SPECIAL CONDITIONS:

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

- F. BASF - St. Joseph shall maintain an operating and maintenance log for the dust collector 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.

- 2. Record Keeping and Reporting Requirements
 - A. BASF - St. Joseph 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. BASF - St. Joseph 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 (5) REVIEW

Project Number: 2014-09-048
Installation ID Number: 021-0132
Permit Number:

BASF - St. Joseph
1305 South 58th Street
St. Joseph, MO 64507
Buchanan County, S18, T57N, R34W

Complete: October 15, 2014

Parent Company:
BASF Corporation
100 Park Avenue
Florham Park, NJ 07932

REVIEW SUMMARY

- BASF - St. Joseph has applied for authority to install a diesel generator and granular production area.
- The only expected HAP emissions from the proposed equipment are combustion products from the diesel generator. All HAP emissions are significantly below de minimis levels and their respective SMALs.
- 40 CFR 60 Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, applies to the equipment.
- 40 CFR 63 Subpart ZZZZ, *National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, applies to the equipment.
- A dust collector is being used to control particulate matter emissions from the granular production 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 Buchanan 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.
- Emissions testing is not required for the equipment.

- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

BASF Corporation acquired the former Becker Underwood facility in St. Joseph, Missouri in January 2013. As of that date, the facility did not have any permits from the Air Pollution Control Program. This installation produces peat and peat inoculants. It includes a granular production area, which produces granular peat infused with organisms grown in the seed treatment fermentation area. This process involves mixing peat with the liquid fermentation product, sifting fines from the watered product, and bagging the final product. Another process line is used to mix powdered humus and fill product bags. All listed equipment is enclosed and vented to a dust collector.

PROJECT DESCRIPTION

During the integration process after BASF Corporation acquired the facility, it was determined that a permit from the Air Pollution Control Program would be required for the diesel generator and granular production area.

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, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Particulate emissions from the granular production area were determined by the actual amount of dust (PM) collected by the dust collector. The total mass of PM collected in a six month period was divided by the product throughput during that time. Then, that value was divided by the filter efficiency (99.5% for PM) to yield the potential to emit for PM. AP-42 Appendix B.1, Section 9.9.1, *Feed and Grain Mills and Elevators: Conveying*, October 1986 was consulted for particle size distributions, in order to calculate the potential emissions of PM₁₀ and PM_{2.5}. It was listed that 69.4% of PM was PM₁₀ and 16.8% was PM_{2.5}. A capture efficiency of 99.5% for PM₁₀ and 99.0% for PM_{2.5} was used for the dust collector.

Combustion emission factors for the diesel generator were taken from the manufacturer's technical data and from AP-42 Section 3.3, *Gasoline and Diesel Industrial Engines*, October 1996 for values not provided by the manufacturer.

The following table provides an emissions summary for this project. This facility has never been permitted before, so existing potential emissions and existing actual emissions have never been documented. Potential emissions of the application represent the potential of the proposed equipment, assuming continuous operation (8,760 hours per year) and not considering control devices. Conditioned potential emissions were calculated using control devices and applicable special conditions.

Table 1: Emissions Summary (tons per year)

| Pollutant | Regulatory <i>De Minimis</i> Levels | Existing Potential Emissions | Existing Actual Emissions | Potential Emissions of the Application | Conditioned Potential Emissions |
|-------------------------|-------------------------------------|------------------------------|---------------------------|--|---------------------------------|
| PM | 25.0 | N/D | N/D | 61.98 | 0.43 |
| PM ₁₀ | 15.0 | N/D | N/D | 43.01 | 0.33 |
| PM _{2.5} | 10.0 | N/D | N/D | 10.41 | 0.22 |
| SO _x | 40.0 | N/D | N/D | 6.02 | N/A |
| NO _x | 40.0 | N/D | N/D | 37.17 | N/A |
| VOC | 40.0 | N/D | N/D | 0.065 | N/A |
| CO | 100.0 | N/D | N/D | 2.59 | N/A |
| GHG (CO ₂ e) | 100,000 | N/D | N/D | 3,377 | N/A |
| Combined HAPs | 25.0 | N/D | N/D | 0.078 | N/A |

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

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

BASF - St. Joseph 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. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065

- *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
- *New Source Performance Regulations*, 10 CSR 10-6.070
 - *–Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, 40 CFR Part 60, Subpart IIII
- *Maximum Achievable Control Technology*, 10 CSR 10-6.075
 - *–National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR Part 63, Subpart ZZZZ

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 special conditions.

Ryan Schott
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 September 17, 2014, received September 23, 2014, designating BASF Corporation as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

APPENDIX A

Abbreviations and Acronyms

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| %percent | m/s meters per second |
| °Fdegrees Fahrenheit | Mgal 1,000 gallons |
| acfmactual 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 National Emissions Standards for Hazardous Air Pollutants |
| CFR Code of Federal Regulations | NO_x nitrogen oxides |
| CO carbon monoxide | NSPS New Source Performance Standards |
| CO₂ carbon dioxide | NSR New Source Review |
| CO_{2e} carbon dioxide equivalent | PM particulate matter |
| COMS Continuous Opacity Monitoring System | PM_{2.5} particulate matter less than 2.5 microns in aerodynamic diameter |
| CSR Code of State Regulations | PM₁₀ particulate matter less than 10 microns in aerodynamic diameter |
| dscf dry standard cubic feet | ppm parts per million |
| EQ Emission Inventory Questionnaire | PSD Prevention of Significant Deterioration |
| EP Emission Point | PTE potential to emit |
| EPA Environmental Protection Agency | RACT Reasonable Available Control Technology |
| EU Emission Unit | RAL Risk Assessment Level |
| fps feet per second | SCC Source Classification Code |
| ft feet | scfm standard cubic feet per minute |
| GACT Generally Available Control Technology | SDS Safety Data Sheet |
| 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/m³micrograms per cubic meter | |

Mr. Jeremy Heronemus
BASF Corporation
1305 S. 58th Street
St Joseph, MO 64507

RE: New Source Review Permit - Project Number: 2014-09-048

Dear Mr. Heronemus:

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 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 and with your operating permit 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 of RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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, 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 administrative hearing commission.

Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Mo 65102. website: www.oa.mo.gov/ahc.

If you have any questions regarding this permit, please do not hesitate to contact Ryan Schott, Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO or (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:rsf

Enclosures

c: Kansas City Regional Office
PAMS File: 2014-09-048

Permit Number:.