

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: 022011-009 Project Number: 2010-11-070

Installation Number: 127-0001

Parent Company: BASF Corporation Agricultural Products

Parent Company Address: P.O. Box 13528, Research Triangle Park, NC 27709

Installation Name: BASF Corporation - Hannibal Site

Installation Address: 3150 Highway JJ, Palmyra, MO 63461

Location Information: Marion County, S10, 11, 14, 15, T58N, R5W

Application for Authority to Construct was made for:
Addition of Intermediate Tank 150-021 into the Prowl herbicide process. 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.

FEB 23 2011

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James L. Kavanagh".
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 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.

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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 Corporation - Hannibal Site
Marion County, S10, 11, 14, 15, T58N, R5W**

1. Control Device Requirement – Refrigerated Condenser 150-014
 - A. BASF Corporation - Hannibal Site shall control emissions from the filtration hold tank 150-100, alkyl separator tank 150-011, and intermediate tank 150-021 using refrigerated condenser 150-014 (emission point PR-22) as specified in the permit application.
 - B. BASF Corporation - Hannibal Site shall record the chilled water temperature, flowrate, and pressure ranges from the refrigerated condenser 150-014 once per shift to demonstrate a confidential control efficiency for volatile organic compounds (VOC). The refrigerated condenser shall be operated in accordance with these ranges, according to Special Conditions 7 and 8 of permit 062000-019.
 - C. BASF Corporation - Hannibal Site shall maintain an operating and maintenance log for the refrigerated condenser 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 Corporation - Hannibal Site 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. BASF Corporation - Hannibal Site 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.

Mr. William Henry
EHS Specialist
BASF Corporation - Hannibal Site
3150 Highway JJ
Palmyra, MO 63461

RE: New Source Review Permit - Project Number: 2010-11-070
Installation ID: 127-0001

Dear Mr. Henry:

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, "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. This is the public version of the permit. A confidential version was written under project 2010-11-071.

BASF Corporation – Hannibal Site (BASF) is a major source of all criteria pollutants and has a Part 70 operating permit. BASF manufactures herbicides including, but not limited to Prowl.

This project consists of the addition of an Intermediate Tank 150-021 into the Prowl herbicide process. Tank 150-021 will store diethylketone (CAS 96-22-0), a volatile organic compound (VOC). Tank 150-021 will be vapor balanced with existing Tanks 150-100 and 150-011. Tanks 150-100 and 150-011 are currently controlled by refrigerated condenser 150-014 (emission point PR-22). At the completion of the project, all three tanks will be controlled by the refrigerated condenser. The addition of Tank 150-021 will debottleneck this portion of the Prowl herbicide process, as production rates under permit 062000-019 have been unobtainable. Therefore, project emissions include the potential emissions from Tank 150-021 summed with the projected actual minus baseline actual emissions from Tanks 150-100 and 150-011.

This method was conservatively applied from 40 CFR 52.21 *Prevention of Significant Deterioration of Air Quality*. However, since this project is not a PSD, and the applicant is not required to keep records of projected actual emissions, the projected actual emissions are replaced by the potential emissions. According to the applicant, no other portions of the Prowl herbicide process are being debottlenecked by the addition of Tank 150-021.

Baseline actual emissions were cited from the average of the 2001 and 2000 Emissions Inventory Questionnaire (EIQ), 1.50 tons of VOC per year. Projected actual emissions of Tanks 150-100 and 150-011 was considered to be the potential emissions of the debottlenecked process minus the potential emissions of Tank 150-021, (3.61 minus 1.80 yields 1.80 tons of VOC per year). The potential emissions of the debottlenecked process were supplied by the applicant, who used a maximum hourly design rate

Mr. William Henry
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(MHDR), an uncontrolled emission factor, and 17,520 hours of operation per year. The increased hours were chosen by the applicant since the tanks are fed by two parallel filters, hence two times 8,760 hours. Therefore, the controlled projected actual minus baseline actual emissions from Tanks 150-100 and 150-011 are 0.30 tons of VOC per year. The potential emissions of Tank 150-021 itself were calculated using the same MHDR and emission factor, but only 8,760 hours, yielding 1.80 tons of VOC per year. The total controlled emissions of the project are 2.11 tons of VOC per year.

The refrigerated condenser's (150-014) VOC control efficiency was determined by the applicant. The control device is monitored by hourly recording water temperature, flowrate, and pressure in accordance with permit 062000-019 and will continue to be required under this permit. Permit applicability was based upon uncontrolled potential emissions, which exceed the insignificance level according to 10 CSR 10-6.061 *Construction Permit Exemptions* (3)(A)3.A. Controlled potential emissions of the project are less than the insignificance level.

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating 10 CSR 10-6.045 *Open Burning Requirements*, 10 CSR 10-6.165 *Restriction of Emission of Odors*, 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, and 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes*.

According to the operating permit, no New Source Performance Standards (NSPS) or Maximum Achievable Control Technology (MACT) applies to the two existing tanks. Tank 150-021 is not subject to NSPS Subpart Kb *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984* because its volume is less than 19,800 gallons.

A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this determination, please contact David Little at the Departments' 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

Kyra L. Moore

Permits Section Chief

KLM:dll

c: Northeast Regional Office
PAMS File: 2010-11-070

Permit Number: