

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: 052011-012 Project Number: 2011-04-027
Installation Number: 027-0010

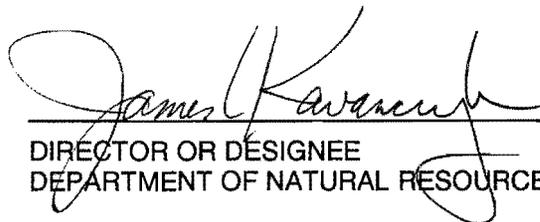
Parent Company: A. P. Green Industries, Incorporated
Parent Company Address: 400 Fairway Drive, Moon Township, PA 15108
Installation Name: A. P. Green Industries - Fulton Plant
Installation Address: 111 Saint Eunice Road, Fulton, MO 65251
Location Information: Callaway County, S5, T47N, R9W

Application for Authority to Construct was made for:
Installation of a 3 ton per hour ball mill. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

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

MAY 27 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 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.

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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."

**A. P. Green Industries - Fulton Plant
Callaway County, S5, T47N, R9W**

1. Control Device Requirement-Baghouse (EP-35)
 - A. A. P. Green Industries - Fulton Plant shall control emissions from the following equipment using a baghouse as specified in the permit application.
 - 1) Ball Mill Feed Bin
 - 2) Ball Mill Feed Conveyor
 - 3) EU0151 West Ball Mill
 - 4) Mill Discharge Conveyor
 - 5) Storage Bin Bucket Elevator
 - 6) #17 Ball Mill Product Storage Bin
 - B. The baghouse 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 Department of Natural Resources' employees may easily observe them.
 - C. Replacement filters for the baghouse 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).
 - D. A. P. Green Industries - Fulton Plant shall monitor and record the operating pressure drop across the baghouse at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. A. P. Green Industries - Fulton Plant 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.

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SPECIAL CONDITIONS:

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

2. Record Keeping Requirement
A. P. Green Industries - Fulton Plant 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.

Ms. Rhonda Vete
Senior Manager, EHS
A. P. Green Industries
400 Fairway Drive
Moon Township, PA 15108

RE: New Source Review Permit - Project Number: 2011-04-027
Installation ID: 027-0010

Dear Ms. Vete:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, 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, if applicable, 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.

A. P. Green Industries - Fulton Plant (A. P. Green – Fulton) is modifying the plant operations so that two different products have separate raw material systems. One product has a bauxite base and the other a clay base. If the raw materials are inadvertently mixed, the final product can be unusable. To meet this objective, A. P. Green – Fulton first received construction permit number 012011-013 for the installation of a ball clay silo and the associated material handling equipment. For the same purpose, A. P. Green – Fulton has now applied for another permit to refurbish a previously permitted ball mill and to install some new material handling equipment and a new dust collector (EP-35). No other equipment will be de-bottlenecked as a result of this project. The following table summarizes the equipment considered for this review.

Table 1: Project Emission Units

Equipment Description	MHDR (tons per hour)	SCC	Control Device
EU0151 West Ball Mill	3	3-05-003-02	EP-35 Baghouse
Ball Mill Feed Bin	3	3-05-020-06	EP-35 Baghouse
(3) Conveyors	3	3-05-020-06	EP-35 Baghouse
#17 Ball Clay Storage Bin (Existing)	3	3-05-020-06	EP-35 Baghouse

MHDR = Maximum Hourly Design Rate; SCC = Source Classification Code

The pollutant of concern from this equipment is particulate matter less than 2.5 microns (PM_{2.5}) and 10 microns (PM₁₀) in diameter. The ball mill (EU0151) was originally permitted under project number 1998-08-074 but has not been in operation since 2002. As part of this project, A. P. Green will refurbish the ball mill and put it back into service. The new equipment that will be installed is a new ball mill feed bin, a ball mill feed conveyor, a ball mill discharge conveyor, and a ball mill product bucket elevator. The project will utilize the existing bin (#17) as the ball mill product storage bin. All of the equipment will be controlled with a new baghouse dust collector (EP-35).

This project is considered the second phase of a plan to establish two separate raw material systems. Permit number 012011-013, for the installation of a new ball clay silo, is considered the first phase. Since both of these projects are part of a phased construction, the potential emissions for both projects are combined for permit review purpose and are summarized in Table 2 below. Potential emissions for permit number 012011-013 were obtained from project number 2010-11-038.

Potential emissions for this phase of the project were calculated using the controlled emission factors found in the following sections of the EPA document, AP-42, Volume I, Fifth Edition, Section 11.3 *Bricks and Related Clay Products* (August 1997) and Section 11.19.2 *Crushed Stone Processing and Pulverized Mineral Processing* (August 2004). Potential emissions of PM_{2.5} for the ball mill were calculated assuming the particle size distribution for Category 3, Mechanically Generated, Unprocessed Ores found in AP-42, Appendix B.2 *Generalized Particle Size Distributions* (September 1996). Potential emissions were calculated assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Project 2010-11-038 Potential Emissions	Project 2011-04-027 Potential Emissions	Combined Potential Emissions
PM _{2.5}	10.0	0.05	0.013	0.045
PM ₁₀	15.0	0.05	0.045	0.095

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 10-3.090 *Restriction of Emission of Odors*, and 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*. 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 Kathi Jantz at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by telephone at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:kjl

c: Northeast Regional Office
PAMS File: 2011-04-027

Permit Number: