

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: 122012-009

Project Number: 2012-02-071
Installation Number: 179-0002

Parent Company: Royal Oak Enterprises, LLC
 Parent Company Address: 1 Royal Oak Avenue, Roswell, GA 30076
 Installation Name: Royal Oak Enterprises, LLC - Reynolds Kiln Facility
 Installation Address: 18042 Hwy B, Centerville, MO 63633
 Location Information: Reynolds County, S5, T31N, R1W

Application for Authority to Construct was made for:
 The installation of screening equipment. 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.

DEC 24 2012

EFFECTIVE DATE

Wendy H. for Kyrat Moore

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 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 start up 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.

Page No.	3
Permit No.	
Project No.	2012-02-071

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."

Royal Oak Enterprises, LLC - Reynolds Kiln Facility
Reynolds County, S5, T31N, R1W

1. Particulate matter less than 10 microns in diameter (PM₁₀) Emission Limitation
 - A. Royal Oak Enterprises, LLC - Reynolds Kiln Facility shall emit less than 15.0 tons of PM₁₀ in any consecutive 12-month period from the following emissions points (see Table 1) listed below.

Table 1: Emissions Unit Summary

Emission Unit ID	Description
EP-11	Hopper Loading
EP-12	Hopper Discharge
EP-13	Conveying
EP-14	Screening
EP-15	Fines Conveyor Discharge
EP-16	Lump Conveyor Discharge

- 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. Royal Oak Enterprises, LLC - Reynolds Kiln Facility 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. Royal Oak Enterprises, LLC - Reynolds Kiln Facility 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.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2012-02-071
Installation ID Number: 179-0002
Permit Number:

Royal Oak Enterprises, LLC - Reynolds Kiln Facility Complete: February 21, 2012
18042 Hwy B
Centerville, MO 63633

Parent Company:
Royal Oak Enterprises, LLC
1 Royal Oak Avenue
Roswell, GA 30076

Reynolds County, S5, T31N, R1W

REVIEW SUMMARY

- Royal Oak Enterprises, LLC - Reynolds Kiln Facility has applied for authority to install a screening process.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- 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.
- 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 de minimis levels. Potential emissions of PM are above de minimis levels, but below major source levels.
- This installation is located in Reynolds County, an attainment area for all criteria pollutants.
- This installation is on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation is classified as item number 25. *Charcoal production facilities*. The installation's major source level is 100 tons per year and fugitive emissions are counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of PM₁₀ are conditioned below de minimis levels. Modeling was not performed for PM because there are no ambient air standards for PM.
- Emissions testing is not required for the equipment.
- Application to amend their Basic Operating Permit is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Royal Oak Enterprises, LLC - Reynolds Kiln Facility (Reynolds Kiln) is an existing charcoal production facility located in Centerville, Missouri, which is in Reynolds County. Originally the facility was owned by Missouri Hardwood and two construction permits were issued to them for the installation of 15 charcoal kilns (Permit Number 032002-022) and then an additional nine more kilns with 3 thermal oxidizers (Permit Number 092002-002). An amendment (Permit Number 092002-002A) moved kilns 23-26 with Afterburner 6 to the location of Afterburner 7 (Afterburner 7 was also relocated.) As a result of these permits, the facility's potential emissions were reduced from major source levels to minor source levels, and Reynolds Kiln requested that their Part 70 operating permit be terminated. Reynolds Kiln was issued a Basic Operating Permit from the Air Pollution Control Program in 2003 which expired in 2008. This location was purchased by Struempf Charcoal (Hand K) back in 2008 from Missouri Hardwood. Struempf Charcoal did not apply for an operating permit in 2008. Royal Oak Enterprises, LLC purchased the facility from Struempf Charcoal in 2010.

The facility has changed over the years to its present day configuration of 18 concrete kilns but has foundations to support 22 kilns. Royal Oak operates five sets of kilns that are controlled by five different afterburners.

- Burner #1 controls kilns #2, 4, and 6.
- Burner #3 (do not have a Burner #2) controls kilns #11, 12, 13, and 14.
- Burner #4 controls kilns #15, 16, 17, and 18.
- Burner #5 controls kilns #19, 20, 21, and 22.
- Burner #6 controls kilns #24, 25, and 26

According to 2011 Emissions Inventory Questionnaire (EIQ), Kilns # 1, 3, 5, and 23 are not operating. Kilns #7, 8, 9, and 10 do not exist.

The following construction permits have been issued to Reynolds Kiln from the Air Pollution Control Program.

Table 2: Previously Issued Construction Permits

Permit Number	Description
032002-022	Installation of 15 new charcoal kilns
092002-002	Installation of 9 charcoal kilns and 3 thermal oxidizers
092002-002A	Move kilns & afterburners (no permit required)

PROJECT DESCRIPTION

Royal Oak Enterprises, LLC - Reynolds Kiln Facility proposes to install screening equipment that will be housed inside a building yet to be constructed. A loader will deposit wood char into a hopper (EP-11) that will discharge (EP-12) onto a conveyor (EP-13). The wood char will be conveyed to a screen (EP-14) that will separate the material into two sizes. The finer material will fall through the screen onto the fines discharge conveyor (EP-15) that will discharge to a storage bunker. The larger wood char will discharge directly into a truck (EP-16). Storage pile and hauling emissions at the site will not increase due to this project since the amount of wood char being produced has not changed.

The emission units considered for the application are summarized in the table below:

Table 3: Emissions Unit Summary

Emission Unit ID	Description	MHDR	MHDR Units
EP-11	Hopper Loading	18	tons per hour (tph)
EP-12	Hopper Discharge	18	tons per hour (tph)
EP-13	Conveying	18	tons per hour (tph)
EP-14	Screening	18	tons per hour (tph)
EP-15	Fines Conveyor Discharge	4.5	tons per hour (tph)
EP-16	Lump Conveyor Discharge	13.5	tons per hour (tph)

EMISSIONS/CONTROLS EVALUATION

Equipment emission factors were obtained from the Factor Information Retrieval (FIRE) System. There are no emission factors for the processing of lump charcoal, so emission factors from similar operations (SCC 3-05-016-07 Raw Material Transfer/Conveying (Lime), SCC 3-05-011-07 Cement Loading: Storage Bins, SCC 3-05-025-11 Screening Sand/Gravel) were used. These emission factors were also noted in a letter issued by the Missouri Department of Natural Resources, dated December 12, 1995 from Clavin Ku to Lori Juergens, Shell Engineering. Since there were no emission factors for PM and PM_{2.5}, a particulate size distribution was obtained from AP-42, Appendix B, Table B.2.2 (Reformatted January, 1995). The particulate size for PM_{2.5} is 15% of PM; the particulate size of PM₁₀ is 51% of PM.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The following Table 4 provides an emissions summary for this project. EP 11 through EP16 are enclosed in a building and 3.7 percent (%) control efficiency was used. The control efficiency for the building enclosure was obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, and Appendix B.2. for AIRS Code 054 process enclosed 3.7 percent, Table 2-3.

Table 4: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions ¹	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	Conditioned Project Emissions	New Installation Potential
PM	25.0	N/D	N/D	119.03	29.41	N/D
PM ₁₀	15.0	45.99	6.89	60.71	<15	60.99
PM _{2.5}	10.0	N/D	3.88	17.85	4.41	N/D
SO _x	40.0	N/D	0.0	N/A	N/A	0.0
NO _x	40.0	<100	12.85	N/A	N/A	<100
VOC	40.0	7.36	0.39	N/A	N/A	7.36
CO	100.0	53.66	5.04	N/A	N/A	53.66
HAPs	10.0/25.0	N/D	0.0	N/A	N/A	N/D

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

¹Existing Potential Emissions were taken from Permit #092002-002 (Project No. 2002-07-091)

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 below de minimis levels. Potential of Particulate Matter (PM) is greater than de minimis but below major source levels; all other pollutants are less than de minimis.

APPLICABLE REQUIREMENTS

Royal Oak Enterprises, LLC - Reynolds Kiln Facility 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
- *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 from Batch Type Charcoal Kilns*, 10 CSR 10-6.330

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.

Kathy Kolb
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 February 17, 2012, received February 21, 2012, designating Royal Oak Enterprises, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Missouri Department of Natural Resources letter from Calvin Ku to Lori Juergens, dated December 12, 1995.
- Factor Information Retrieval (FIRE) System.
- AP-42, Appendix B, Table B.2.2 (Reformatted January, 1995).

Mr. Randy Beech
Vice President
Royal Oak Enterprises, LLC - Reynolds Kiln Facility
1 Royal Oak Avenue
Roswell, GA 30076

RE: New Source Review Permit - Project Number: 2012-02-071

Dear Mr. Beech:

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, "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 have any questions regarding this permit, please do not hesitate to contact Kathy Kolb, at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office
PAMS File: 2012-02-071

Permit Number: