

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: 11 2014-007

Project Number: 2014-09-007  
Installation ID: 101-0040

Parent Company: Yake Enterprises, LLC

Parent Company Address: 3156 South Chambery Ave, Springfield, MO 65804

Installation Name: Yake Enterprises, LLC

Installation Address: 320 SE 23 Highway, Knob Noster, MO 65336

Location Information: Johnson County, S9 T45N R24W

Application for Authority to Construct was made for:  
Installation of a mobile impactor plant (rock crusher). 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.

NOV 10 2014

*Kendall B. Halo for Kyna Moore*

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 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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**GENERAL SPECIAL CONDITIONS:**

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

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*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."*

1. **Equipment Identification Requirement**  
Yake Enterprises, LLC shall maintain easily read permanent markings on each component of the plant. These markings shall be the equipment's serial number or a company assigned identification number that uniquely identifies the individual component. These identification numbers must be submitted to the Air Pollution Control Program no later than 15 days after start-up of the portable rock crushing plant.
2. **Best Management Practices Requirement**  
Yake Enterprises, LLC shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
3. **Annual Emission Limit**
  - A. Yake Enterprises, LLC shall emit less than 15.0 tons of PM<sub>10</sub> in any 12-month period from the entire installation.
  - B. Yake Enterprises, LLC shall demonstrate compliance with Special Condition 3.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Wet Suppression Control System Requirement**
  - A. Yake Enterprises, LLC shall install and operate wet spray devices on all crushers and screens.
  - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, Yake Enterprises, LLC shall adjust the production rate to control emissions from these units. Yake Enterprises, LLC shall record a brief description of such events.
5. **Minimum Distance to Property Boundary Requirement**  
The primary emission (EP-02) point shall be located at least 300 feet from the nearest property boundary.
6. **Concurrent Operation Restriction**  
Yake Enterprises, LLC is prohibited from operating whenever other plants are located at the site.

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**GENERAL SPECIAL CONDITIONS:**

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

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7. **Primary Equipment Requirement**  
Yake Enterprises, LLC shall process all rock through the primary crusher (EP-02). Bypassing the primary crusher is prohibited.
8. **Nonroad Engine Requirement**  
Yake Enterprises, LLC's engine serves a dual purpose for the track mounted crusher and track-mounted screen by propelling itself and performing another function (supplying power to the crusher, screen, and conveyors) and therefore meets the definition of a nonroad engine as stated in 40 CFR 89.2 *Nonroad Engine* (1)(i).
9. **Record Keeping Requirement**  
Yake Enterprises, LLC shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
10. **Reporting Requirement**  
Yake Enterprises, LLC shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

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

Project Number: 2014-09-007  
Installation ID Number: 101-0040  
Permit Number:

Yake Enterprises, LLC  
320 SE 23 Highway  
Knob Noster, MO 65336

Complete: October 3, 2014

Parent Company:  
Yake Enterprises, LLC  
3156 South Chambery Ave  
Springfield, MO 65804

Johnson County, S9 T45N R24W

PROJECT DESCRIPTION

Yake Enterprises, LLC will be locating a Metso Loko Track 1110S portable crushing unit to crush and recycle brick, concrete, and mortar-containing building material generated primarily by the Whiteman Air Force Base, but also other entities in the Knob Noster area. The portable crusher will be located approximately 300 feet from the nearest property line. Although this rock crusher is a portable plant, it is being permitted as a stationary plant with no intent of relocating it within 24 months. The portable plant is track mounted and the engine serves a dual purpose by propelling the portable plant and supplying power to the crusher, screen, and conveyors. Therefore it meets the definition of a nonroad engine as stated in 40 CFR 89.2 *Nonroad Engine* (1)(i). Spray bars for dust control are installed on the crusher, the screen/shaker, and the two under conveyors.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control emissions from haul roads and vehicular activity areas.

This installation is located in Johnson 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.

No permits have been issued to Yake Enterprises, LLC from the Air Pollution Control Program.

## TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. This is a new facility and there are no existing actual emissions. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the annual emission limit.

Table 1: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions Of Process Equipment (tons/yr)	Existing Actual Emissions	<sup>a</sup> Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	3.35	N/A	63.46	34.70
PM <sub>10</sub>	15.0	1.24	N/A	27.44	<15.0
PM <sub>2.5</sub>	10.0	0.03	N/A	5.79	3.16
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO <sub>2</sub> e)	100,000	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

<sup>a</sup>Includes site specific haul road and storage pile emissions

Table 3 summarizes the ambient air quality impact analysis. The maximum modeled impact is the impact of each pollutant when the plant is operating continuously. The 24-hour limited impacts and daily limit are based on compliance with the NAAQS for PM<sub>10</sub>.

Table 2: Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL (µg/m <sup>3</sup> )	Averaging Time	<sup>a</sup> Maximum Modeled Impact (µg/m <sup>3</sup> )	Limited Impact (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Daily Limit (tons/day)
<sup>b</sup> PM <sub>10</sub> (solitary)	150.0	24-hour	38.55	N/A	20.0	N/A

<sup>a</sup>Modeled impact at maximum capacity with controls

<sup>b</sup>Solitary operation

## EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United

States EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the rock-crushing equipment were calculated using emission factors from AP-42 Section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004. The controlled emission factors were used because the equipment is control by water spray devices.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 90% control efficiency for PM and PM<sub>10</sub> and a 40% control efficiency for PM<sub>2.5</sub> were applied to the emission calculations for the use of BMPs. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

## AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 2. The Air Pollution Control Program requires an AAQIA of PM<sub>10</sub> for all asphalt, concrete and rock-crushing plants regardless of the level of PM<sub>10</sub> emissions if a permit is required. An AAQIA is required for other pollutants if their emissions exceed their respective de minimis or screening model action level (SMAL). The AAQIA was performed using the Air Pollution Control Program's generic nomographs and when appropriate the EPA modeling software AERSCREEN. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the NAAQS or RAL for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of 20 µg/m<sup>3</sup> of PM<sub>10</sub> in accordance with the Air Pollution Control Program's BMPs interim policy.

## 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 PM<sub>10</sub> are conditioned below de minimis and no refined modeling is required. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

## APPLICABLE REQUIREMENTS

Yake Enterprises, LLC 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.
- A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.
- *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

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment.

## 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 August 29, 2014, received September 3, 2014, designating Yake Enterprises, LLC as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.



## Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the plant is operating.

1. Pavement
  - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions while the plant is operating.
  - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  
2. Application of Chemical Dust Suppressants
  - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
  - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources' personnel upon request.
  
3. Application of Water-Documented Daily
  - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
  - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
  - C. Watering may also 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.
  - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
  - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources' personnel upon request.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....percent	<b>MMBtu</b> .... Million British thermal units
<b>°F</b> .....degrees Fahrenheit	<b>MMCF</b> .... million cubic feet
<b>acfm</b> .....actual cubic feet per minute	<b>MSDS</b> .... Material Safety Data Sheet
<b>BACT</b> .....Best Available Control Technology	<b>NAAQS</b> ... National Ambient Air Quality Standards
<b>BMPs</b> ..... Best Management Practices	<b>NESHAPs</b> ..National Emissions Standards for Hazardous Air Pollutants
<b>Btu</b> ..... British thermal unit	<b>NO<sub>x</sub></b> ..... nitrogen oxides
<b>CAM</b> ..... Compliance Assurance Monitoring	<b>NSPS</b> ..... New Source Performance Standards
<b>CAS</b> ..... Chemical Abstracts Service	<b>NSR</b> ..... New Source Review
<b>CEMS</b> ..... Continuous Emission Monitor System	<b>PM</b> ..... particulate matter
<b>CFR</b> ..... Code of Federal Regulations	<b>PM<sub>2.5</sub></b> ..... particulate matter less than 2.5 microns in aerodynamic diameter
<b>CO</b> ..... carbon monoxide	<b>PM<sub>10</sub></b> ..... particulate matter less than 10 microns in aerodynamic diameter
<b>CO<sub>2</sub></b> ..... carbon dioxide	<b>ppm</b> ..... parts per million
<b>CO<sub>2e</sub></b> ..... carbon dioxide equivalent	<b>PSD</b> Prevention of Significant Deterioration
<b>COMS</b> ..... Continuous Opacity Monitoring System	<b>PTE</b> ..... potential to emit
<b>CSR</b> ..... Code of State Regulations	<b>RACT</b> ..... Reasonable Available Control Technology
<b>dscf</b> ..... dry standard cubic feet	<b>RAL</b> ..... Risk Assessment Level
<b>EQ</b> ..... Emission Inventory Questionnaire	<b>SCC</b> ..... Source Classification Code
<b>EP</b> ..... Emission Point	<b>scfm</b> ..... standard cubic feet per minute
<b>EPA</b> ..... Environmental Protection Agency	<b>SDS</b> ..... Safety Data Sheet
<b>EU</b> ..... Emission Unit	<b>SIC</b> ..... Standard Industrial Classification
<b>fps</b> ..... feet per second	<b>SIP</b> ..... State Implementation Plan
<b>ft</b> ..... feet	<b>SMAL</b> ..... Screening Model Action Levels
<b>GACT</b> ..... Generally Available Control Technology	<b>SO<sub>x</sub></b> ..... sulfur oxides
<b>GHG</b> ..... Greenhouse Gas	<b>SO<sub>2</sub></b> ..... sulfur dioxide
<b>gpm</b> ..... gallons per minute	<b>tph</b> ..... tons per hour
<b>gr</b> ..... grains	<b>tpy</b> ..... tons per year
<b>GWP</b> ..... Global Warming Potential	<b>VMT</b> ..... vehicle miles traveled
<b>HAP</b> ..... Hazardous Air Pollutant	<b>VOC</b> ..... Volatile Organic Compound
<b>hr</b> ..... hour	
<b>hp</b> ..... horsepower	
<b>lb</b> ..... pound	
<b>lbs/hr</b> ..... pounds per hour	
<b>MACT</b> ..... Maximum Achievable Control Technology	
<b>µg/m<sup>3</sup></b> ..... micrograms per cubic meter	
<b>m/s</b> ..... meters per second	
<b>Mgal</b> ..... 1,000 gallons	
<b>MW</b> ..... megawatt	
<b>MHDR</b> ..... maximum hourly design rate	

Mr. Glen Yake  
Member  
Yake Enterprises, LLC  
3156 South Chambery Ave  
Springfield, MO 65804

RE: New Source Review Permit - Project Number: 2014-09-007

Dear Mr. Yake:

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 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 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 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 W. High Street, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.ao.mo.gov/ahc](http://www.ao.mo.gov/ahc).

If you have any questions, please do not hesitate to contact Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. .

Sincerely,

**AIR POLLUTION CONTROL PROGRAM**

Susan Heckenkamp  
New Source Review Unit Chief

SH:kk1

Enclosures

c: Kansas City Regional Office  
PAMS File: 2014-09-007  
Permit Number: