

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: **032014-006**

Project Number: 2013-08-057  
Installation Number: 510-0674

Parent Company: Strategic Materials, Inc.

Parent Company Address: 16365 Park Ten Place, Suite 200, Houston, TX 77084

Installation Name: Strategic Materials, Inc.

Installation Address: 24 Branch Street, St. Louis, MO 63147

Location Information: City of St. Louis, LG 03333

Application for Authority to Construct was made for:  
A previously constructed glass recycling facility. 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.

**MAR 18 2014**

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EFFECTIVE DATE

A handwritten signature in cursive script, reading "Kyna L Moore".  
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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.

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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."*

Strategic Materials, Inc.  
City of St. Louis, LG 03333

1. Control Device Requirement-Baghouse
  - A. Strategic Materials, Inc. shall control emissions from the fluid bed dryer (EU-03) using a baghouse as specified in the permit application.
  - 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 baghouses 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. Strategic Materials, Inc. shall monitor and record the operating pressure drop across the baghouses 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. Strategic Materials, Inc. shall maintain a copy of the baghouse manufacturer's performance warranty on site.
  - F. Strategic Materials, Inc. 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 and Reporting Requirements
  - A. Strategic Materials, Inc. 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 MSDS for all materials used
  - B. Strategic Materials, Inc. 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: 2013-08-057  
Installation ID Number: 510-0674  
Permit Number:

Strategic Materials, Inc.  
24 Branch Street  
St. Louis, MO 63147

Complete: October 25, 2013

Parent Company:  
Strategic Materials, Inc.  
16365 Park Ten Place, Suite 200  
Houston, TX 77084

City of St. Louis, LG 03333

REVIEW SUMMARY

- Strategic Materials, Inc. has applied for authority to operate a previously constructed glass recycling facility.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are products of natural gas combustion.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- A baghouse is being used to control the particulate emissions from the fluid bed dryer.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in the City of St. Louis, a nonattainment area for the 8-hour ozone standard and the PM<sub>2.5</sub> standard and an attainment area for all other 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 for VOC, PM<sub>2.5</sub>, and NO<sub>x</sub> is 100.0 tons per year. The installation's major source level is 250 tons per year for all other pollutants and fugitive emissions are not counted toward major source applicability for all other criteria pollutants.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION/PROJECT DESCRIPTION

Strategic Materials, Inc. receives post-consumer glass beverage containers from curbside recycling and municipal recycling facilities. The glass will be used to manufacture glass cullet. Processing and production of the cullet is conducted with use of feed hoppers, transfer conveyors, manual trash removal operations, crushing, screen operations, magnetic metal removal, and a fluidized bed natural gas dryer for the cullet. Strategic Materials, Inc. will receive post-consumer glass beverage containers, sort and classify the glass containers by type of glass, crush the glass, remove any unwanted products such as paper and metal, and store the cullet until shipping. The facility operates two process lines which are bottlenecked by three optical sorters which have a maximum hourly design rate equal to 10 tons of glass per hour. The optical sorters are in series and therefore do not allow more than 10 tons of cullet to be processed in an hour. Particulate emissions from the fluid bed dryer (EU-03) will be controlled by a baghouse as required by Special Condition 1 of this permit. Particulate emissions from the bottle line and material transfer (EU-02) will be controlled using hoods that are routed to baghouses. However, Strategic Materials, Inc. requested that the control efficiency of the baghouses would not be considered for these emission units in this review. Potential to emit for this review considers EU-02 to be uncontrolled. The processing equipment, including the number of drop points, at this facility is shown in Table 1 below.

Table 1: Emission Units

Emission unit	Line Description	Emission Units Included in Line	Control Device	Bottlenecked MHDR
EU-01	Destoner Line	1 feed hopper, 1 Eriez magnet, 1 cross belt magnet, 3 conveyors, 1 destoner, and 8 drop points	None	10.0 tons
EU-02a	Bottle Line	1 feed hopper, 1 cross belt magnet, 5 conveyors, 1 optical sorter, and 8 drop points	Baghouses (voluntary usage)	10.0 tons
EU-02b		1 feed hopper, 1 cross belt magnet, 5 conveyors, 1 shaker screen, 2 optical sorters, and 9 drop points		
EU-02c		1 feed hopper, 1 cross belt magnet, 1 crusher, 1 shaker screen, 9 conveyors, 2 optical sorters, and 15 drop points		
EU-02d		4 conveyors and 4 drop points from fugitive material transfer from drop out boxes 3, 5a, 8, and cyclone 7		
EU-03	Dryer	1 fluid bed dryer	Baghouse	5 MMBtu
EU-04a	Haul Road #1	Truck entrance	Paved	0.012 VMT
EU-04b	Haul Road #2	Truck exit	Paved	0.022 VMT
EU-04c	Haul Road #3	Front End Loader	Unpaved	0.354 VMT

No permits have been issued to Strategic Materials, Inc. from the Air Pollution Control Program.

#### 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*, Fifth Edition, section numbers:

- For the EU-02:
  - 11.19.1 *Sand and Gravel Processing* November, 1995 and the supporting background document
  - 11.19.2 *Crushed Stone Processing and Pulverized Mineral Processing* August, 2004
- For haul road emissions (EU-04):
  - 13.2.1 *Paved Road* January, 2011
  - 13.2.2 *Unpaved Road* November, 2006
- For storage piles (EU-04)
  - 13.2.4 *Aggregate Handling and Storage Piles* November, 2006

The following table provides an emissions summary for this project. Existing potential emissions are not available because this installation has never received a construction permit. Existing actual emissions were provided by Strategic Materials, Inc. Potential emissions of the application represent the potential of the equipment located at this installation, assuming continuous operation (8760 hours per year). Particulate emissions from the fluid bed dryer (EU-03) will be controlled by a baghouse as required by Special Condition 1 of this permit. The controlled emission rates from the fluid bed dryer (EU-03) were provided by Strategic Material, Inc. in the form of a stack test from a larger fluid bed dryer that is controlled by a baghouse. Particulate emissions from the emission units associated with EU-02 will be controlled by hoods that are routed to baghouses. The baghouses that control particulate emissions from EU-02 are not required by Special Condition 1 and are not considered for the installation controlled potential.

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2012 EIQ)	Potential Emissions of the Application	New Installation Controlled Potential
PM	25.0	N/A	N/A	56.17	13.65
PM <sub>10</sub>	15.0	N/A	N/A	47.04	4.53
PM <sub>2.5</sub>	10.0	N/A	N/A	44.06	1.55
SO <sub>x</sub>	40.0	N/A	N/A	0.013	0.013
NO <sub>x</sub>	40.0	N/A	N/A	2.15	2.15
VOC	40.0	N/A	N/A	0.11	0.11
CO	100.0	N/A	N/A	1.8	1.8
GHG (CO <sub>2</sub> e)	100,000	N/A	N/A	2,592.2	2,592.2
GHG (mass)	0.0 / 250.0	N/A	N/A	2,576.6	2,576.6
HAPs	10.0/25.0	N/A	N/A	0.041	0.041

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 all pollutants are below de minimis levels.

### APPLICABLE REQUIREMENTS

Strategic Materials, Inc. 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
- *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 applies to the equipment at this facility, but the facility is inherently compliant.

## 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.

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J Luebbert  
New Source Review Unit

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 8, 2013, received August 22, 2013, designating Strategic Materials, Inc. 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

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

Mr. David Schwartz  
Plant Manager  
Strategic Materials, Inc.  
24 Branch Street  
St. Louis, MO 63147

RE: New Source Review Permit - Project Number: 2013-08-057

Dear Mr. Schwartz:

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 and 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 have any questions regarding this permit, please do not hesitate to contact J Luebbert, 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:jl

Enclosures

c: St. Louis Regional Office  
PAMS File: 2013-08-057

Permit Number: