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: 012017-010
Project Number: 2016-10-010
Installation ID: 027-0073

Parent Company: ESS Materials, LLC
Parent Company Address: P.O. Box 2029, Washington, MO 63090
Installation Name: ESS Materials, LLC
Installation Address: Route J, Fulton, MO 65251
Location Information: Callaway County, S11 T48N R11W

Application for Authority to Construct was made for:
New stationary concrete plant. 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.

Prepared by
Chad Stephenson
New Source Review Unit

Director or Designee
Department of Natural Resources

JAN 18 2017

Effective Date
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 Enforcement and Compliance Section of 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 Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant sources(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's 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 the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's 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 using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
http://dnr.mo.gov/regions/
SITE SPECIFIC 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."

1. Annual Emission Limit
   A. ESS Materials, LLC shall emit less than 15.0 tons of PM10 in any 12-month period from the entire installation.

   Table 1: Summary of Emission Sources
<p>|</p>
<table>
<thead>
<tr>
<th>Emission Point (EP) Number</th>
<th>Emission Unit Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aggregate Transfer</td>
</tr>
<tr>
<td>2</td>
<td>Sand Transfer</td>
</tr>
<tr>
<td>3</td>
<td>Cement unloading to silo</td>
</tr>
<tr>
<td>4</td>
<td>Supplement unloading</td>
</tr>
<tr>
<td>5</td>
<td>Weigh hopper loading</td>
</tr>
<tr>
<td>6</td>
<td>Truck Mixer/Central Mixer</td>
</tr>
<tr>
<td>7</td>
<td>Storage Pile 1</td>
</tr>
<tr>
<td>8</td>
<td>Storage Pile 2</td>
</tr>
<tr>
<td>9</td>
<td>Haul Road 1</td>
</tr>
<tr>
<td>10</td>
<td>Haul Road 2</td>
</tr>
<tr>
<td>11</td>
<td>Water Heater</td>
</tr>
</tbody>
</table>

   B. ESS Materials, LLC shall demonstrate compliance with Special Condition 1.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.

2. Undocumented Watering Requirement
   ESS Materials, LLC shall apply a water spray on all haul roads and vehicular activity areas whenever conditions exist that would allow visible emissions from these sources to leave the property.

3. Moisture Content Testing Requirement
   A. ESS Materials, LLC shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by weight.

   B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
SITE SPECIFIC SPECIAL CONDITIONS:
The permittee is authorized to construct and operate subject to the following special conditions:

C. The initial test shall be conducted no later than 45 days after the start of operation. A second test shall be performed the calendar year following the initial test during the months of July or August.

D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).

E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the ESS Materials, LLC main office within 30 days of completion of the required test.

F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test is less than the moisture content in Special Condition 3.A, ESS Materials, LLC shall either:
   1) Apply for a new permit to account for the revised information, or
   2) Submit a plan for the installation of wet spray devices to the Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.

G. In lieu of testing, ESS Materials, LLC may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.

4. Control Device Requirement-Baghouse/Cartridge Filter
   A. ESS Materials, LLC shall control emissions from the equipment listed below using baghouses or cartridge filters as specified in the permit application.
      1) Cement Silo (Cartridge Filter)
      2) Supplement Silo (Cartridge Filter)
      3) Truck Mix Loadout and Central Mixer Loading (shroud vented to baghouse)

   B. The baghouses and cartridge filters shall be operated and maintained in accordance with the manufacturer's specifications. The baghouses and cartridge filters 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 Department of Natural Resources' employees may easily observe them.

   C. Replacement filters for the baghouses and cartridge filters 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).
SITE SPECIFIC SPECIAL CONDITIONS:
The permittee is authorized to construct and operate subject to the following special conditions:

D. ESS Materials, LLC shall monitor and record the operating pressure drop across the baghouses and cartridge filters at least once every 24 hours while in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer’s performance warranty.

E. ESS Materials, LLC shall maintain a copy of the baghouse and cartridge filter manufacturer’s performance warranty on site.

F. ESS Materials, LLC shall maintain an operating and maintenance log for the baghouses and cartridge filters 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.

5. Record Keeping Requirement
ESS Materials, LLC shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources’ personnel upon request.

6. Reporting Requirement
ESS Materials, 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.
PROJECT DESCRIPTION

ESS Materials, LLC will be constructing a ready-mix concrete batch plant consisting of a Erie Strayer Low Profile Transit/Central Batch Plant (MPB 11T&C) rated at 700 tons per hour. The concrete plant can be used as a truck mix or central mix depending on the job. Stone will be delivered to the site by end-dump trailers by a 600 feet long haul road. The plant will have two storage piles that are approximately 1 acre each. The plant will be powered off the grid but will include a diesel fired boiler rated at 2.8 MMBtu/hr for heating water. The applicant is using undocumented watering to control emissions from haul roads and vehicular activity areas.

This installation is located in Callaway 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 ESS Materials, 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. There are no existing actual emissions since this project is for a new plant. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). Conditioned potential emissions account for a voluntary PM$_{10}$ de minimis limit to avoid dispersion modeling requirements found in 10 CSR-6.060 Section (6).
Table 2: Emissions Summary (tons per year)

<table>
<thead>
<tr>
<th>Air Pollutant</th>
<th>De Minimis Level/SMAL</th>
<th>Emissions of Process Equipment</th>
<th>Existing Actual Emissions</th>
<th>Potential Emissions of the Application</th>
<th>Conditioned Potential Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>25.0</td>
<td>35.59</td>
<td>N/A</td>
<td>600.53</td>
<td>47.51</td>
</tr>
<tr>
<td>PM_{10}</td>
<td>15.0</td>
<td>17.65</td>
<td>N/A</td>
<td>189.59</td>
<td>&lt;15.0</td>
</tr>
<tr>
<td>PM_{2.5}</td>
<td>10.0</td>
<td>8.29</td>
<td>N/A</td>
<td>34.97</td>
<td>2.77</td>
</tr>
<tr>
<td>SO_{x}</td>
<td>40.0</td>
<td>0.02</td>
<td>N/A</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>NO_{x}</td>
<td>40.0</td>
<td>1.75</td>
<td>N/A</td>
<td>1.75</td>
<td>0.14</td>
</tr>
<tr>
<td>CO</td>
<td>40.0</td>
<td>0.03</td>
<td>N/A</td>
<td>0.03</td>
<td>0.002</td>
</tr>
<tr>
<td>VOC</td>
<td>100.0</td>
<td>0.44</td>
<td>N/A</td>
<td>0.44</td>
<td>0.03</td>
</tr>
<tr>
<td>Total HAPs</td>
<td>25.0</td>
<td>0.00</td>
<td>N/A</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

N/A = Not Applicable

^a Excludes haul road and storage pile emissions

^b Includes site specific haul road and storage pile emissions

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 concrete batch plant were calculated using emission factors from AP-42 Section 11.12 “Concrete Batching,” June 2006. This section cites Equation (1) in Section 13.2.4 “Aggregate Handling and Storage Piles,” November 2006 for calculating the emissions from aggregate and sand transfer. The cement and supplement silos are controlled with C&W LPR filter vent with reverse pulse jet cartridges, so the controlled emission factors were used. Emissions from the aggregate weigh hopper were calculated using AP-42 Section 13.2.4, Equation (1). Emissions from mix truck loading and central mixer loading are controlled by a shroud vented to a baghouse, so the controlled emission factor was used. The truck mix emission factor was used as a more conservative emission factor.

Emissions from the water heater were calculated using emission factors from AP-42 Section 1.3 “Fuel Oil Combustion”, May 2010.

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. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. A 50% control efficiency for PM and PM_{10} and a 22% control efficiency for PM_{2.5} are applied to the emission calculations for the use of undocumented watering. The moisture content of the aggregate is 1.5% by weight. 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.”
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\textsubscript{10} 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

ESS Materials, 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

- Start-Up, Shutdown, and Malfunction Conditions, 10 CSR 10-6.050
- 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
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed 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*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 10, 2016, received October 11, 2016, designating ESS Materials, LLC as the owner and operator of the installation.
This sheet covers the period from ________ to ________ (Copy as needed) (Month, Day Year) (Month, Day Year)

<table>
<thead>
<tr>
<th>Month</th>
<th>Production (tons)</th>
<th>Emission Factor (lb/ton)</th>
<th>Monthly Emissions&lt;sup&gt;1&lt;/sup&gt; (lbs)</th>
<th>Monthly Emissions&lt;sup&gt;2&lt;/sup&gt; (tons)</th>
<th>12-Month Total Emissions&lt;sup&gt;3&lt;/sup&gt; (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Example</em></td>
<td>40,000</td>
<td>0.0618</td>
<td>2,472</td>
<td>1.24</td>
<td>14.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.0618</td>
<td></td>
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<td>0.0618</td>
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</tr>
</tbody>
</table>

<sup>1</sup>Multiply the monthly production by the emission factor.
<sup>2</sup>Divide the monthly emissions (lbs) by 2000.
<sup>3</sup>Add the monthly emissions (tons) to the sum of the monthly emissions from the previous eleven months. A total of less than 15.0 tons of PM<sub>10</sub> is necessary for compliance.
JAN 18 2017

Mr. Mitch Parrish
Chief Operating Officer
ESS Materials, LLC
P.O. Box 2029
Washington, MO 63090

RE: New Source Review Permit - Project Number: 2016-10-010

Dear Mr. Parrish:

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.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: http://dnr.mo.gov/regions/. The online CAV request can be found at http://dnr.mo.gov/cav/compliance.htm.

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, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.
If you have any questions regarding this permit, please do not hesitate to contact Chad Stephenson, at the department's 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

[Signature]
Susan Heckenkamp
New Source Review Unit Chief

SH:csj

Enclosures

c: Northeast Regional Office
   PAMS File: 2016-10-010

Permit Number: 012017-010