

Application for General Permit Registration

G20-B Hot Mix Asphalt

Greer Industries, Inc. dba Buckeye Asphalt Company

Modification to Permit G20-A0005



West Virginia Department of Environmental Protection

Division of Air Quality

June 2016

GREER ENGINEERING

8477 Veterans Memorial Highway

Masontown, West Virginia 26542

(304) 864-5411

Table of Contents

- Permit Application
- Attachment A – Current Business Certificate
- Attachment B – Process Description
- Attachment C – Description of Fugitive Emissions
- Attachment D – Process Flow Diagram
- Attachment E – Plot Plan
- Attachment F – Area Map
- Attachments G & H – Equipment Data Sheets & Air Pollution Control Device Sheets
- Attachment I – Emissions Calculations
- Attachment J – Class I Legal Advertisement
- Attachment K – Electronic Submittal
- Attachment L – Application Fee
- Attachment N – Safety Data Sheets
- Attachment O – Emissions Summary Sheets



WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 DIVISION OF AIR QUALITY
 601 57th Street, SE
 Charleston, WV 25304
 Phone: (304) 926-0475 • www.dep.wv.gov/daq

APPLICATION FOR GENERAL PERMIT REGISTRATION
 CONSTRUCT, MODIFY, RELOCATE OR ADMINISTRATIVELY UPDATE
 A STATIONARY SOURCE OF AIR POLLUTANTS

- CONSTRUCTION MODIFICATION RELOCATION CLASS I ADMINISTRATIVE UPDATE
 CLASS II ADMINISTRATIVE UPDATE

CHECK WHICH TYPE OF GENERAL PERMIT REGISTRATION YOU ARE APPLYING FOR:

- | | |
|---|--|
| <input type="checkbox"/> G10-D – Coal Preparation and Handling | <input type="checkbox"/> G40-C – Nonmetallic Minerals Processing |
| <input checked="" type="checkbox"/> G20-B – Hot Mix Asphalt | <input type="checkbox"/> G50-B – Concrete Batch |
| <input type="checkbox"/> G30-D – Natural Gas Compressor Stations | <input type="checkbox"/> G60-C – Class II Emergency Generator |
| <input type="checkbox"/> G33-A – Spark Ignition Internal Combustion Engines | <input type="checkbox"/> G65-C – Class I Emergency Generator |
| <input type="checkbox"/> G35-A – Natural Gas Compressor Stations (Flare/Glycol Dehydration Unit) | <input type="checkbox"/> G70-A – Class II Oil and Natural Gas Production Facility |

SECTION I. GENERAL INFORMATION

| | | | |
|--|--|--|--|
| 1. Name of applicant (as registered with the WV Secretary of State's Office): Greer Industries Inc, dba Buckeye Asphalt Company | | 2. Federal Employer ID No. (FEIN): 340737241 | |
| 3. Applicant's mailing address: 8477 Veterans Memorial Highway Masontown, WV 26542 | | 4. Applicant's physical address: 442 Blaney Hollow Road Morgantown, WV 26508 | |
| 5. If applicant is a subsidiary corporation, please provide the name of parent corporation: N/A | | | |
| 6. WV BUSINESS REGISTRATION. Is the applicant a resident of the State of West Virginia? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, provide a copy of the Certificate of Incorporation/ Organization / Limited Partnership (one page) including any name change amendments or other Business Registration Certificate as Attachment A. ⇨ IF NO, provide a copy of the Certificate of Authority / Authority of LLC / Registration (one page) including any name change amendments or other Business Certificate as Attachment A. | | | |

SECTION II. FACILITY INFORMATION

| | | | |
|---|--|-----|--|
| 7. Type of plant or facility (stationary source) to be constructed, modified, relocated or administratively updated (e.g., coal preparation plant, primary crusher, etc.): Hot Mix Asphalt Plant | 8a. Standard Industrial Classification Classification (SIC) code: 2951 | AND | 8b. North American Industry System (NAICS) code: 324121 |
| 9. DAQ Plant ID No. (for existing facilities only): <u>0 6 1 - 0 0 1 2 6</u> | 10. List all current 45CSR13 and other General Permit numbers associated with this process (for existing facilities only): G20-A005 | | |

A: PRIMARY OPERATING SITE INFORMATION

| | | | |
|--|---------------------------------------|---|--|
| 11A. Facility name of primary operating site: <u>Buckeye Asphalt Plant</u> | | 12A. Address of primary operating site: Mailing: <u>8477 Veterans Memorial Hwy</u> Physical: <u>442 Blaney Hollow Rd</u> <u>Masontown, WV 26542</u> <u>Morgantown, WV 26508</u> | |
| 13A. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, please explain: <u>Applicant is the owner of the property of the site.</u> ⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE. | | | |
| 14A. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road; ⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F . <u>The facility is located off of Blaney Hollow Road, which is on the right, approximately 3 miles North on</u> <u>WV Rt. 857, off of I-68.</u> | | | |
| 15A. Nearest city or town: <u>Morgantown, WV</u> | 16A. County: <u>Monongalia Co.</u> | 17A. UTM Coordinates: Northing (KM): <u>4395.2</u> <input checked="" type="checkbox"/> Easting (KM): <u>603.8</u> Zone: <u>17</u> | |
| 18A. Briefly describe the proposed new operation or change (s) to the facility: <u>This application includes the addition of an Asphalt Silo, 4 Conveyors, 6 Transfer Points, and 2 Asphalt Tanks. This application encompasses the entire facility, to update all information on the permit.</u> | | 19A. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: <u>39.700345</u> Longitude: <u>-79.789262</u> | |

B: 1ST ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits)

| | | | |
|---|--|---|--|
| 11B. Name of 1 st alternate operating site: _____ | | 12B. Address of 1 st alternate operating site: Mailing: _____ Physical: _____ | |
| 13B. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, please explain: _____ ⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE. | | | |

| | | |
|---|--------------|--|
| 14B. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road; ⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F . <hr/> <hr/> | | |
| 15B. Nearest city or town: | 16B. County: | 17B. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____ |
| 18B. Briefly describe the proposed new operation or change (s) to the facility: | | 19B. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____ |

C: 2ND ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits):

| | | |
|---|---|--|
| 11C. Name of 2 nd alternate operating site: | 12C. Address of 2 nd alternate operating site: Mailing: _____ Physical: _____ | |
| 13C. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO ⇨ IF YES, please explain: _____ ⇨ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE. | | |
| 14C. ⇨ For Modifications or Administrative Updates at an existing facility, please provide directions to the present location of the facility from the nearest state road; ⇨ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a MAP as Attachment F . <hr/> <hr/> | | |
| 15C. Nearest city or town: | 16C. County: | 17C. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____ |
| 18C. Briefly describe the proposed new operation or change (s) to the facility: | | 19C. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____ |

| | |
|---|---|
| <p>20. Provide the date of anticipated installation or change:</p> <p>____/____/____</p> <p><input checked="" type="checkbox"/> If this is an After-The-Fact permit application, provide the date upon which the proposed change did happen: :</p> <p>____/____/____</p> | <p>21. Date of anticipated Start-up if registration is granted:</p> <p>____/____/____</p> <p>Facility is currently operating.</p> |
| <p>22. Provide maximum projected Operating Schedule of activity/activities outlined in this application if other than 8760 hours/year. (Note: anything other than 24/7/52 may result in a restriction to the facility's operation).</p> <p>Hours per day <u>24</u> Days per week <u>7</u> Weeks per year <u>52</u> Percentage of operation _____</p> | |

SECTION III. ATTACHMENTS AND SUPPORTING DOCUMENTS

| |
|--|
| <p>23. Include a check payable to WVDEP – Division of Air Quality with the appropriate application fee (per 45CSR22 and 45CSR13).</p> |
| <p>24. Include a Table of Contents as the first page of your application package.</p> |
| <p>All of the required forms and additional information can be found under the Permitting Section (General Permits) of DAQ's website, or requested by phone.</p> |
| <p>25. Please check all attachments included with this permit application. Please refer to the appropriate reference document for an explanation of the attachments listed below.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> ATTACHMENT A : CURRENT BUSINESS CERTIFICATE <input checked="" type="checkbox"/> ATTACHMENT B: PROCESS DESCRIPTION <input checked="" type="checkbox"/> ATTACHMENT C: DESCRIPTION OF FUGITIVE EMISSIONS <input checked="" type="checkbox"/> ATTACHMENT D: PROCESS FLOW DIAGRAM <input checked="" type="checkbox"/> ATTACHMENT E: PLOT PLAN <input checked="" type="checkbox"/> ATTACHMENT F: AREA MAP <input checked="" type="checkbox"/> ATTACHMENT G: EQUIPMENT DATA SHEETS AND REGISTRATION SECTION APPLICABILITY FORM <input checked="" type="checkbox"/> ATTACHMENT H: AIR POLLUTION CONTROL DEVICE SHEETS <input checked="" type="checkbox"/> ATTACHMENT I: EMISSIONS CALCULATIONS <input checked="" type="checkbox"/> ATTACHMENT J: CLASS I LEGAL ADVERTISEMENT <input checked="" type="checkbox"/> ATTACHMENT K: ELECTRONIC SUBMITTAL <input checked="" type="checkbox"/> ATTACHMENT L: GENERAL PERMIT REGISTRATION APPLICATION FEE <input type="checkbox"/> ATTACHMENT M: SITING CRITERIA WAIVER <input checked="" type="checkbox"/> ATTACHMENT N: MATERIAL SAFETY DATA SHEETS (MSDS) <input checked="" type="checkbox"/> ATTACHMENT O: EMISSIONS SUMMARY SHEETS <input type="checkbox"/> OTHER SUPPORTING DOCUMENTATION NOT DESCRIBED ABOVE (Equipment Drawings, Aggregation Discussion, etc.) <p>Please mail an original and two copies of the complete General Permit Registration Application with the signature(s) to the DAQ Permitting Section, at the address shown on the front page of this application. Please DO NOT fax permit applications. For questions regarding applications or West Virginia Air Pollution Rules and Regulations, please refer to the website shown on the front page of the application or call the phone number also provided on the front page of the application.</p> |

SECTION IV. CERTIFICATION OF INFORMATION

This General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of a Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, Emission Inventory, Certified Emission Statement, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. Any administratively incomplete or improperly signed or unsigned Registration Application will be returned to the applicant.

FOR A CORPORATION (domestic or foreign)

I certify that I am a President, Vice President, Secretary, Treasurer or in charge of a principal business function of the corporation

FOR A PARTNERSHIP

I certify that I am a General Partner

FOR A LIMITED LIABILITY COMPANY

I certify that I am a General Partner or General Manager

FOR AN ASSOCIATION

I certify that I am the President or a member of the Board of Directors

FOR A JOINT VENTURE

I certify that I am the President, General Partner or General Manager

FOR A SOLE PROPRIETORSHIP

I certify that I am the Owner and Proprietor

I hereby certify that (please print or type) _____ is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Office of Air Quality immediately, and/or,

I hereby certify that all information contained in this General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible

Signature J. Robert Gwynne Date 3/31/2016
(please use blue ink) Responsible Official

Name & Title J. Robert Gwynne, Executive Vice President
(please print or type)

Signature _____ Date _____
(please use blue ink) Authorized Representative (if applicable)

Applicant's Name Greer Industries, Inc. dba Buckeye Asphalt Company

Phone & Fax Phone: 304-864-5411 Fax: 304-864-5458
Phone Fax

Email gwynne@greerindustries.com AND skisner@greerindustries.com

Attachment A:
Current Business Certificate

**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**GREER INDUSTRIES INC
DBA BUCKEYE ASPHALT COMPANY
FAIRCHANCE RD
MORGANTOWN, WV 26505**

BUSINESS REGISTRATION ACCOUNT NUMBER: **1027-2454**

This certificate is issued on: 06/24/2010

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with W.Va. Code § 11-12.*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

Attachment B: Process Description

Buckeye Asphalt Company proposes to modify Permit G20-A005 to include a second asphalt silo, 4 conveyors, 6 transfer points, and 2 asphaltic cement tanks. An internal environmental audit of the facility was completed in 2013 and found sources that were not listed under the current air permit. This "After-the-Fact" application encompasses the entire process and includes all sources, not just sources missed during the original registration, to update the entire permit to current status. Some Source IDs have been updated and a chart has been provided that corresponds the current Source IDs to the new Source IDs.

The increase in the PTE for all pollutants was determined by subtracting the TPY values from the original permit application, submitted in 1999.

Process Description

Aggregate is transferred (TP1/PE) via endloader to a feed bin (B1-B6/PE) which uses belt feeders to transfer the material (TP2/N) to a screen (SN1-SN3/PE). Oversize material drops to the ground (TP3/N), and pass through material transfers (TP4/N) onto a belt conveyor (BC1/N). Next, the material is transferred (TP5/PE) to another belt conveyor (BC2/N), where it is fed directly into the dryer (D1/BH). BC2 has the potential to also direct the material (TP6/PE) onto a third belt conveyor (BC3/N) for the purpose of product sampling and testing. From BC3, the material drops to the ground (TP7/N).

D1 is fueled by either natural gas or No. 2 fuel oil. The natural gas is pipeline gas, and the fuel oil is trucked to the facility and fed from the No. 2 Fuel Oil Tank (F1). Asphaltic cement tanks (A1-A3) feed into D1, where it is mixed with aggregate to form Hot Mix Asphalt (HMA). HMA is transferred to a slat conveyor (SLC1/FE) then either fed directly into an asphalt silo (S2/FE), or to a transverse conveyor (TC1/FE) and finally into a second asphalt silo (S3/FE). HMA is transferred via a chute into trucks, during load out. An additional Bypass Chute is located on SLC1 for direct truck loading, which bypasses the silos.

D1 is controlled by a baghouse (BH1) [E-001]. BH1 collects particulate matter from D1 and the fines silo (S1/BH). Fines from BH1 are pneumatically transferred (TP9/BH) by a screw conveyor (SC1/BH) and a blower into S1. Fines from S1 are either transferred via a fixed chute into a truck (TP8/Fixed Spout), or through the fines return, which transfers fines pneumatically (TP10/BH) using a blower, into D1.

Heater (H1/N) [E-002] is fueled by either natural gas or No. 2 fuel oil, and is used to heat A1-A3 as well as other plant components in order to successfully transfer asphaltic cement and HMA through the process.

| Old Source ID | Old Description | New Source ID | New Description |
|---------------|---|---------------|--|
| D1 | Dryer | D1 | * |
| BH1 | Baghouse | BH1 | * |
| B1 | Bin 1 | B1 | * |
| B2 | Bin 2 | B2 | * |
| B3 | Bin 3 | B3 | * |
| B4 | Bin 4 | B4 | * |
| B5 | Bin 5 | B5 | * |
| B6 | Bin 6 | B6 | * |
| S1 | (Fines) Silo 1 | S1 | * |
| S2 | (Asphalt) Silo 2 | S2 | * |
| H1 | Heater | H1 | * |
| BC1 | Belt Conveyor 1 | BC1 | * |
| BC2 | Belt Conveyor 2 | SLC1 | Slat Conveyor 1 |
| SC1 | Screen 1 | SN1 | * |
| SC2 | Screen 2 | SN2 | * |
| SC3 | Screen 3 | SN3 | * |
| T1-T6 | Transfer Point from Loader to Bins | TP1 | * |
| T7-T9 | Transfer Point from Bins to Screens | TP2 | * |
| T10-T12 | Transfer Point from Screens to Belt Conveyor 1 | TP4 | * |
| T13 | Transfer Point from Belt Conveyor 1 to Dryer | TP5 | Transfer Point from Belt Conveyor 1 to Belt Conveyor 2 |
| T14 | Transfer Point from Dryer to Belt Conveyor 2 | ASL | Asphalt Silo Loading (Dryer to SLC1) |
| T15 | Transfer Point from Belt Conveyor 2 to (Asphalt) Silo 2 | ASL | Asphalt Silo Loading (SLC1 to S2; TC1 to S3) |
| T16 | Transfer Point from (Asphalt) Silo 2 to Truck | ATL | Asphalt Truck Loading (S2-S3 to Truck) |
| Tank 1 (T1) | #2 Fuel Oil Tank | F1 | * |
| Tank 2 (T2) | Asphalt Tank | A1 | Asphaltic Cement Tank 1 |
| | | S3 | (Asphalt) Silo 3 |
| | | BC2 | Belt Conveyor 2 |
| | | BC3 | Belt Conveyor 3 |
| | | TC1 | Transverse Conveyor |
| | | SC1 | Screw Conveyor |
| | | TP3 | Transfer Point from Screens to Ground (Oversized Material) |
| | | TP6 | Transfer Point from Belt Conveyor 2 to Belt Conveyor 3 |
| | | TP7 | Transfer Point from Belt Conveyor 3 to Ground |
| | | TP8 | Transfer Point from (Fines) Silo 1 to Truck |
| | | TP9 | Transfer Point from Baghouse to (Fines) Silo 1 |
| | | TP10 | Transfer Point from (Fines) Silo 1 to Dryer |
| | | A2 | Asphaltic Cement Tank 2 |
| | | A3 | Asphaltic Cement Tank 3 |

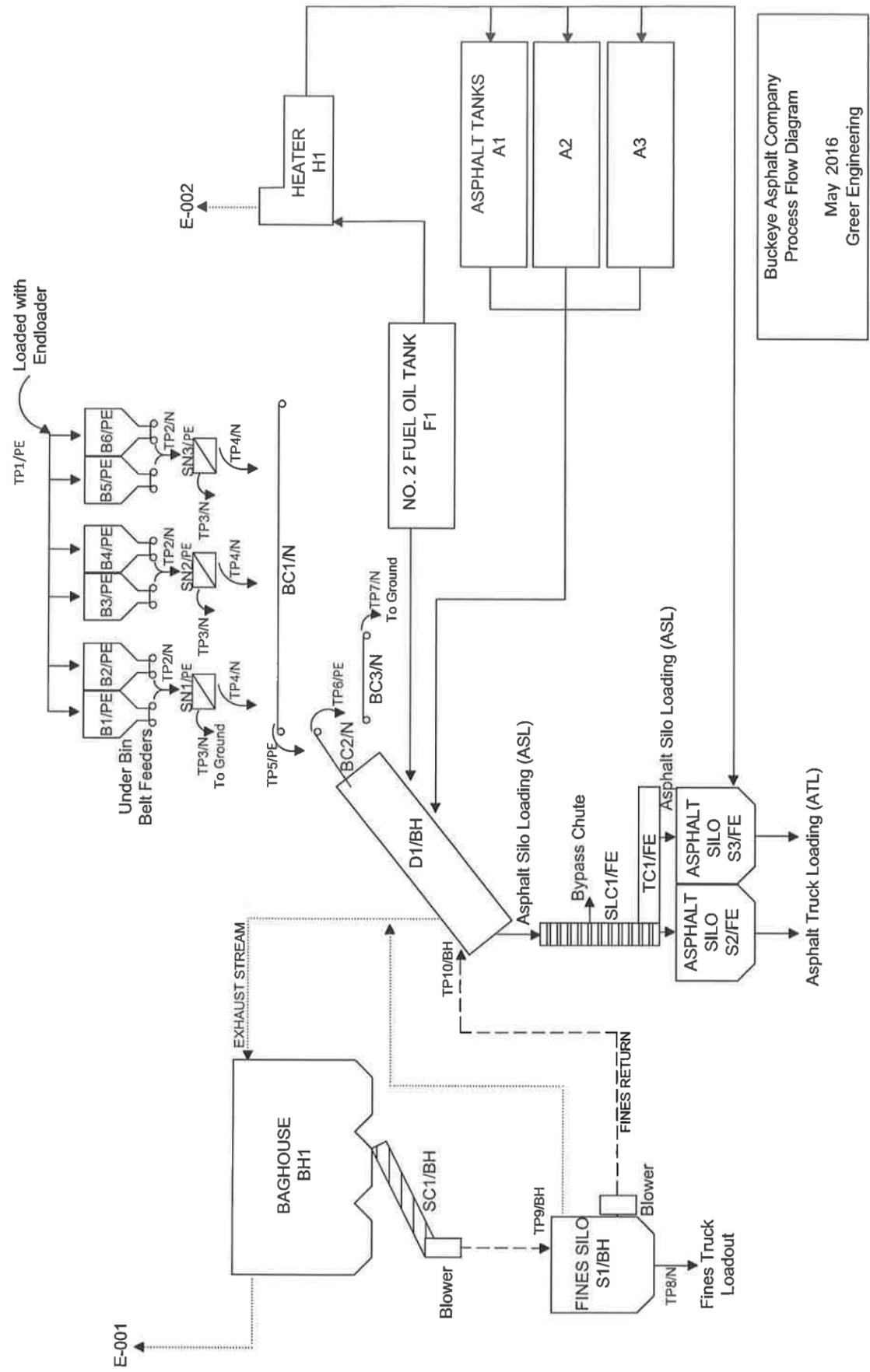
* Description remains the same as previous permit

Attachment C: Description of Fugitive Emissions

Buckeye Asphalt Company proposes a few changes to the fugitive emissions in Permit G20-A005. The one-way haulroad length will remain 0.17 miles of unpaved, gravel haulroad. However, the maximum truck travel will be 14 trucks/hour and 16,000 trucks/year, based on a 25 ton maximum load per truck. Empty and full trucks weigh, on average, 15 and 40 tons, respectively. These changes are solely due to a recalculation in truck weight and load capacity. There is no change to the maximum throughput of the facility. A water truck will be used as necessary with up to 50 gpm of water being applied to the haulroad, consistent with the current permit.

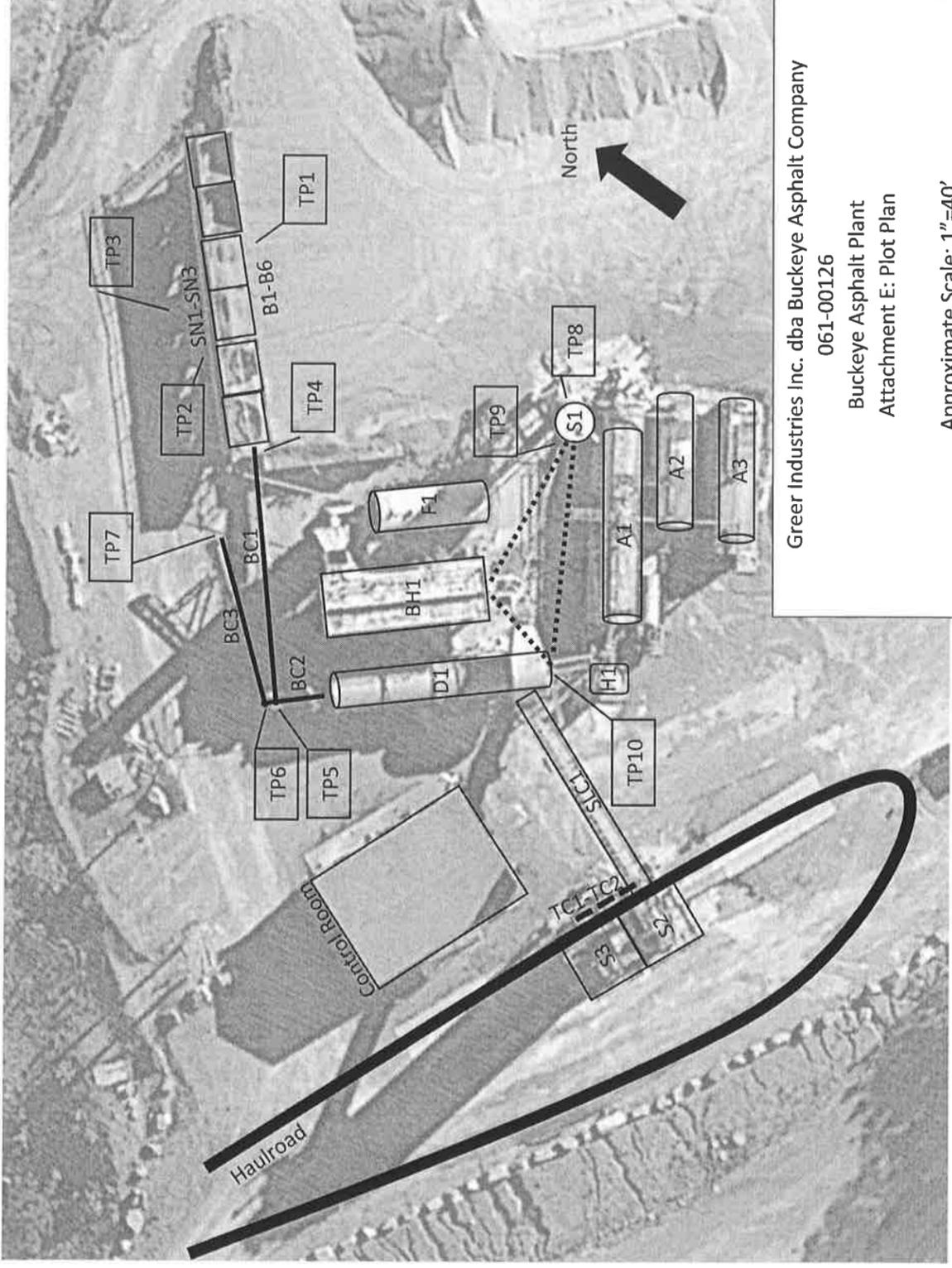
There are no stockpiles associated with this permit.

**Attachment D:
Process Flow Diagram**



Buckeye Asphalt Company
 Process Flow Diagram
 May 2016
 Greer Engineering

Attachment E:
Plot Plan



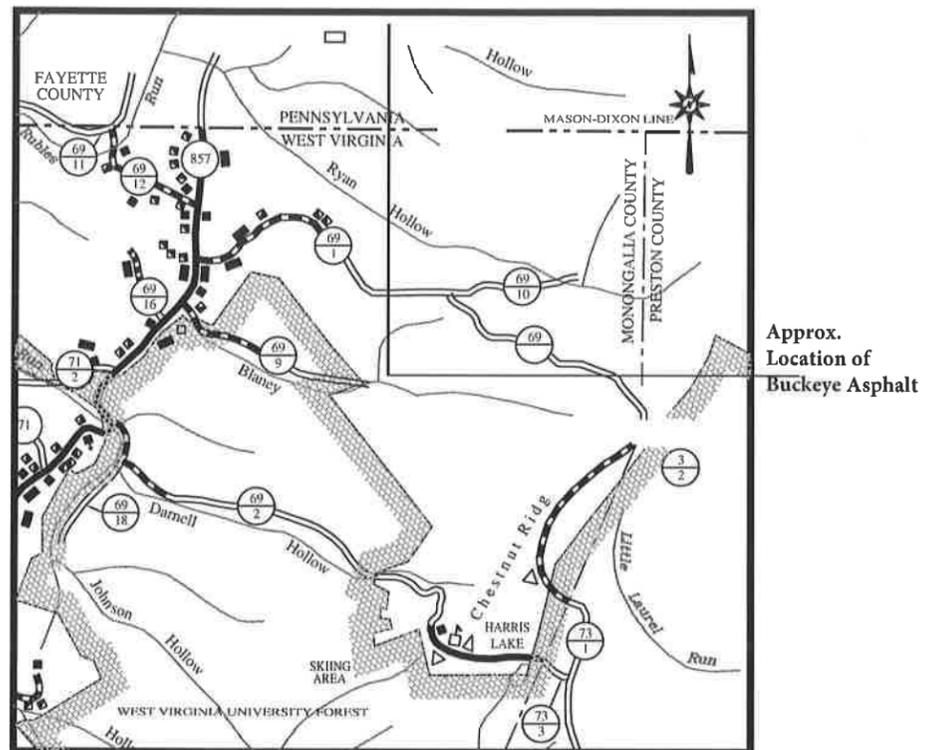
Greer Industries Inc. dba Buckeye Asphalt Company
 061-00126
 Buckeye Asphalt Plant
 Attachment E: Plot Plan

Approximate Scale: 1" = 40'
 Central Coordinates (UTM): 603.8 km E; 4395.2 km N
 Base Elevation: 1480'
 Date Drawn: 4-19-16; Submittal Date: June 2016

Attachment F:

Area Map

GREER INDUSTRIES, INC.
dba BUCKEYE ASPHALT CO



UNION DISTRICT, MONONGALIA COUNTY WV
LOCATION MAP - SCALE: 1" = 1 MILE
Lake Lynn Quad
UTM Coordinates: 603.8 km E; 4395.2 km N
Elevation: 1480 ft

Attachments G & H:

**Equipment Data Sheets & Air Pollution Control Device
Sheets**

HMA PLANT PRODUCTION AFFECTED SOURCE SHEET

| | | |
|--------------------------------|---|---|
| General HMA Plant Information | Source Identification Number ¹ | D1 |
| | Manufacturer & Model Number | Fab-Spec. Model No. 644-12 |
| | Date of Manufacture | 1994 |
| | Plant Type ² | PFDM |
| | Max Production Rate (ton/hour) | 350 |
| | Max Yearly Production (tons/year) | 400,000 |
| | Annual Operation (hours/year) | 8760 |
| Batch Plant Information | Tons per Batch | N/A |
| | Batches per Hour | N/A |
| Drum Mixer Information | Drum Length (ft) | 100 |
| | Drum Diameter (ft) | 44 |
| Burner, Fuel & Combustion Data | Burner Manufacturer & Model Number | Hauck, Model No. 55-520 |
| | Design Heat Input (mmBTU/hour) | 96.0 |
| | Excess Air (%) | 25 |
| | Fuel Type ³ | PNG/ #2FO |
| | Maximum Fuel Usage ⁴ | 96,000 scf/hr (PNG) / 700 gph (#2FO) |
| | Fuel Heating Value ⁵ | 1000 BTU/scf (PNG) / 138,000 BTU/gal (#2FO) |
| | Maximum Sulfur Content (%) | Trace (PNG) / 0.5% by weight (#2FO) |
| Maximum Ash Content (%) | Nil (PNG) / Trace (#2FO) | |

1. Enter the appropriate Source Identification Number for each rotary dryer or drum mixer. Batch plant rotary dryer should be designated BPRD-1, parallel flow drum mixer designated PFDM-1, and counterflow drum mixer designated CDFM-1, etc.

2. Enter the Plant Type designation using the following codes:

| | | | |
|-------|----------------------------------|------|------------------------------|
| Batch | Batch Plant | PFDM | Parallel Flow Drum Mix Plant |
| CFDM | Counterflow Drum Mix Plant | CNMX | Continuous Mix Plant |
| COMB | Combination Batch/Drum Mix Plant | | |

3. Enter the Fuel Type(s) using the following code:

| | | | |
|-----|------------------------------|------|-------------------|
| PNG | Pipeline Quality Natural Gas | #2FO | Number 2 Fuel Oil |
| UO | Used or Recycled Oil | | |

4. Enter the maximum fuel use in standard cubic feet per hour (natural gas) or gallons per hour (fuel oil). List appropriate units.

5. Enter the Fuel heating value in Btu per standard cubic foot (natural gas) or Btu per gallon (fuel Oil). List appropriate units.

AIR POLLUTION CONTROL DEVICE AFFECTED SOURCE SHEET

| HMA PLANT AIR POLLUTION CONTROL DEVICE DATA SHEET | | PRIMARY COLLECTION (CYCLONE) | SECONDARY COLLECTION (BAGHOUSE) |
|---|--|------------------------------|---------------------------------|
| General Information | APCD Identification Number ¹ | N/A | BH1 |
| | Manufacturer & Model Number | | Fab-Spec. Model No. 644-12 |
| Physical Parameters | Number of Cylinders | | |
| | Number of Compartments | | 1 |
| | Cylinder Diameter (ft) | | |
| | Cylinder Length (ft) | | |
| | Cone Length (ft) | | |
| | Gas Inlet Area (ft ²) | | 22 |
| | Gas Outlet Area (ft ²) | | 22 |
| | Bag Cleaning Mechanism ² | | Reverse Jet |
| | Total Cloth (fabric) Area (ft ²) | | 11978 |
| | Draft Fan HP | | 150 |
| Outlet Stack Area (ft ²) | | 20.70 | |
| Operational Parameters | Minimum Design ΔP (in H ₂ O) | | 2 |
| | Maximum Design ΔP (in H ₂ O) | | 10 |
| | Inlet Gas Flow Rate (ACFM) | | 65527 |
| | Inlet Gas Temperature (°F) | | 310 |
| | Inlet Gas Pressure (PSIA) | | 14.45 |
| | Inlet Gas Velocity (ft/sec) | | 49.6 |
| | PM Inlet Rate (grains/ACF) | | 54.13 |
| | PM Outlet Rate (grains/ACF) | | 0.025 |
| Operating Air/Cloth Ratio (ft ³ /min) | | 5.47 | |

1. Enter the appropriate Air Pollution Control Device Identification Number for the primary and secondary collectors. The primary collector should be designated APCD-1 and the secondary collector designated APCD-2. If the secondary collector incorporates a knockdown or settling chamber and combines the functions of a primary and secondary collector, enter NONE for the primary collector APCD identification number and designate the secondary collector APCD-1.

2. Enter method used to clean bags: shaker, pulse jet, reverse jet or other.

**HMA PLANT MATERIAL STORAGE & HANDLING
AFFECTED SOURCE SHEET**

| | | | | |
|---|--|---------------------------------------|---------------------------------------|--|
| Source Identification Number ¹ | S1 | S2 | S3 | |
| Material Stored ² | Fines | Asphalt Mix (HMA) | Asphalt Mix (HMA) | |
| Maximum Yearly Throughput (tons/year) ³ | 15,200 | 400,000 | 400,000 | |
| Typical Moisture Content (%) ⁴ | 3 | 3 | 3 | |
| Average % of Material Passing Through 200 Mesh Sieve ⁵ | 20 | <1 | <1 | |
| Maximum Stockpile Base Area (ft ²) ⁶ | N/A | N/A | N/A | |
| Maximum Stockpile Height (ft) ⁷ | N/A | N/A | N/A | |
| Maximum Storage Capacity (tons) ⁸ | 75 | 240 | 240 | |
| Dust Control Method Applied to Storage ⁹ | FE/OT-BH | FE | FE | |
| Method of Material Load-in to Bin or Stockpile ¹⁰ | OT-Pneumatic Transfer | SS | SS | |
| Dust Control Method Applied During Load-in ¹¹ | OT-BH | FE | FE | |
| Method of Material Load-out from Bin or Stockpile ¹⁰ | OT-Pneumatic Transfer to D1 OR Chute to | OT-Chute to Truck | OT-Chute to Truck | |
| Dust Control Method Applied During Load-out ¹¹ | OT-BH OR Fixed Spout | OT-N/A HMA is not a source of dust | OT-N/A HMA is not a source of dust | |

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes four open stockpiles and one storage silo, the Source Identification Numbers should be OS-1, OS-2, OS-3, and OS-4; and BS-1, respectively.
 OS Open Stockpile E3 Enclosure (three-sided enclosure)
 BS Bin or Storage Silo (full enclosure) SB Storage Building (full enclosure)
 SF Stockpiles with wind fences OT Other _____ (please specify)

2. Describe the type of material stored or stockpiled.

3. Enter the maximum yearly storage throughput for each storage activity.

4. Enter the average percent moisture content of the stored material.

5. Enter the average percent of material that will pass through a 200 mesh sieve.

6. For stockpiles, enter the maximum stockpile base area.

7. For stockpiles, enter the maximum stockpile height.

8. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.).

9. Enter the dust control method applied to storage activity using the following codes:
 CA Crusting Agent WS Water Spray
 FE Full Enclosure NO None
 OT Other _____ (please specify)

10. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:
 FE Front Endloader SS Stationary Conveyor/Stacker
 ST Stacking Tube MC Mobile Conveyor/Stacker
 CS Clamshell TD Truck Dump
 OT Other _____ (please specify)

11. Enter the dust control method applied during load-in or load-out using the following codes:
 CA Crusting Agent WS Water Spray
 FE Full Enclosure MD Minimize Drop Height
 ST Stacking Tube NO None
 OT Other _____ (please specify)

HMA PLANT FUGITIVE DUST CONTROL SYSTEM AFFECTED SOURCE SHEET

| | | |
|--------------------------------------|--|--------------|
| Fugitive Dust Control System Data | Fugitive Dust Control Method ¹ | WT |
| | Design Water Flow Rate (gpm) ² | 50 |
| | Chemical Additive ³ | N/A |
| | Water/Additive Mix Ratio ⁴ | N/A |
| | Amount (gal/yd) ⁵ | As Necessary |
| | Frequency of Application ⁶ | As Necessary |
| | Haulroad Surface ⁷ | Gravel |
| | Work/Storage Area Surface ⁸ | Gravel |
| | Haulroad Length ⁹ | 0.17 miles |
| | Number of Vehicles per day ¹⁰ | 467 |
| | Number of Wheels per Vehicle ¹¹ | 6 |
| | Weight of Vehicle (tons) ¹² | 27.5 |

1. Enter the fugitive dust control method(s) using the following codes:

WT Water Truck WS Fixed Water Sprays
 UW Underbody Truck Wash RS Rumble Strips
 OT Other _____ (please specify)

2. Enter the design water flow rate for the water truck or fixed water sprays in gallons per minute.

3. Enter manufacturer and type, specification or grade of chemical additive.

4. Enter the water/chemical additive mix ratio.

5. Enter the amount of water or water/chemical additive mix to be applied to haulroads, storage and work areas in gallons per square yard.

6. Enter the frequency of application of water/chemical additive mix to haulroads, storage and work areas during periods of dry weather.

7. Enter the type of haulroad, work and storage area surface (asphalt pavement, concrete, dirt, coarse gravel, reddog, etc.).

8. Enter the approximate length of haulroad(s) in miles or feet. List appropriate units.

9. Enter the maximum daily vehicle traffic (trucks per day).

10. Enter the maximum number of wheels per vehicle.

11. Enter the mean vehicle weight in tons.

12. Complete a separate HMA Plant Fugitive Dust Control System Data sheet for each fugitive dust control system.

HMA PLANT ASPHALT HEATER AFFECTED SOURCE SHEET

| Source Identification Number ¹ | Maximum Fuel Use ² | Fuel Type ³ | Hours of Operation (hrs/yr) ⁴ |
|---|-------------------------------------|------------------------|--|
| H1 | 1000 scf/hr (PNG) / 7.25 gph (#2FO) | PNG / #2FO | 8760 |
| | | | |
| | | | |

1. Enter the appropriate Source Identification Number for each asphaltic cement tank heater located at the hot mix asphalt plant. Asphaltic cement tank heaters should be designated AH-1, AH-2, etc.
2. Enter the maximum fuel use in standard cubic foot per hour (natural gas) or gallons per hour (fuel oil). List appropriate units.
3. Enter the Fuel Type using the following codes:
PNG Pipeline Quality Natural Gas #2FO Number 2 Fuel Oil UO Used Oil
4. Enter the maximum hours of operation each year.

HMA PLANT STORAGE TANK AFFECTED SOURCE SHEET

| Source Identification Number ¹ | Content ² | Length ³ (ft) | Dia ⁴ (ft) | Volume ⁵ (gallons) | Throughput ⁶ (gal/yr) | Orientation ⁷ | Liquid Height ⁸ (ft) |
|---|----------------------|--------------------------|-----------------------|-------------------------------|----------------------------------|--------------------------|---------------------------------|
| F1 | #2 Fuel Oil | 25.5 | 10 | 15,000 | 800,000 | Horz | Approx. half |
| A1 | Asphaltic Cement | 50 | 11 | 35,000 | 2,000,000 | Horz | Approx. half |
| A2 | Asphaltic Cement | 27 | 10 | 15,000 | 2,000,000 | Horz | Approx. half |
| A3 | Asphaltic Cement | 32.8 | 10.5 | 20,000 | 2,000,000 | Horz | Approx. half |

1. Enter the appropriate Source Identification Number for each storage tank located at the hot mix asphalt plant.
Storage tanks should be designated T-1, T-2, T-3, etc.
2. Enter storage tank content (#2 fuel oil, asphaltic cement, water, etc.)
3. Enter storage tank length in feet.
4. Enter storage tank diameter in feet.
5. Enter storage tank volume in gallons. Storage tank volume may be calculated using the following mathematical relationship:
(length of tank) X (area conversion) X (tank diameter)² X (liquid volume conversion) or,
(L_{tank} ft) X (3.14/4) X (d_{tank}² ft²) X (7.48 gallons/ft³)
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following codes:
VERT Vertical Tank HORZ Horizontal Tank
8. Enter storage tank average liquid height in feet.
9. Storage tank emissions may be calculated using TANKS emission calculation program.

**Attachment I:
Emission Calculations**

Emissions from Unpaved Haulroad

AP-42, 13.2.2 Unpaved Roads (11/06)

E= Emission factor extrapolated for natural mitigation $E_{ext} = k \left(\frac{s}{12}\right)^a \left(\frac{W}{3}\right)^b [(365 - P)/365]$ lb/VMT

Equations (1a; 2)

Parameters

k= particle size multiplier

PM-TSP 4.9

Table 13.2.2-2; Industrial Roads

s= surface material silt content (%)

10

Table 13.2.2-1; Stone quarrying and processing, Plant road, mean silt content

W= mean vehicle weight, tons

27.5 tons

Mean vehicle weight (15 tons empty; 40 tons fully loaded)

a (empirical constant)

PM-TSP 0.7

Table 13.2.2-2; Industrial Roads

b (empirical constant)

PM-TSP 0.45

Table 13.2.2-2; Industrial Roads

P= number of days per year with ≥ 0.01 in of precipitation

157 days

Figure 13.2.2-1

Calculated Emission Factor

PM-TSP 6.66 lb/VMT

Round-trip Distance per Truck

0.34 miles/truck

Maximum Production Rate

350 ton/hr
400,000 TPY

Maximum Round-trips (Trucks) per Hour

up to 14 trucks/hr
up to 16000 trucks/yr

| Fugitive Emission ID | Description | Throughput | | Emission Factor lb/VMT | Uncontrolled Emissions | | Control Device | | Controlled Emissions | | |
|----------------------|----------------------------|------------|-----------|---------------------------|------------------------|-------|----------------|--------------|----------------------|------|------|
| | | trucks/hr | trucks/yr | | lb/hr | tpy | ID | Efficiency % | lb/hr | tpy | |
| Haulroad | Unpaved Haulroad Emissions | 14.0 | 16000 | 6.66 | 31.71 | 18.12 | WT | 70 | 9.51 | 5.44 | |
| | | | | | | | | | TOTAL TSP | 9.51 | 5.44 |
| | | | | | | | | | TOTAL PM10** | 4.53 | 2.59 |

**PM10=(PM-TSP)/2.1

Dryer Drum Emissions (E-001)

AP-42, HMA Plant Emission Factor Sheet

| Emission Factors | | |
|------------------|-----------------------------------|--------------------------------|
| | Piped Natural Gas (lb/ton HMA) | No. 2 Fuel Oil (lb/ton HMA) |
| PM-TSP | 0.018 | 0.04 |
| PM10 | 0.0082 | 0.031 |
| VOC | 0.051 | 0.069 |
| SO2 | 0.0033 | 0.056 |
| Nox | 0.03 | 0.075 |
| CO | 0.056 | 0.036 |
| Acetaldehyde | - | 0.0013 |
| Benzene | 0.0012 | 0.00041 |
| Ethylbenzene | 0.00029 | 0.00038 |
| Toluene | 0.0002 | 0.00075 |
| Xylene | 0.0004 | 0.00016 |
| Formaldehyde | 0.0036 | 0.0024 |

| Emission Type | Description | Throughput | | Emission Factor | | PNG Controlled Emissions | | #2FO Controlled Emissions | | Maximum Emissions | |
|---------------|-------------------------|------------|-----------|------------------|-------------------|-----------------------------|---------|------------------------------|---------|-------------------|-------|
| | | HMA (TPH) | HMA (TPY) | PNG (lb/ton HMA) | #2FO (lb/ton HMA) | lb/hr | tpy | lb/hr | tpy | lb/hr | tpy |
| PM-TSP | Criteria Pollutant | 350 | 400,000 | 0.018 | 0.04 | 6.3000 | 3.6000 | 14.0000 | 8.0000 | 14.00 | 8.00 |
| PM10 | Criteria Pollutant | 350 | 400,000 | 0.0082 | 0.031 | 2.8700 | 1.6400 | 10.8500 | 6.2000 | 10.85 | 6.20 |
| VOC | Criteria Pollutant | 350 | 400,000 | 0.051 | 0.069 | 17.8500 | 10.2000 | 24.1500 | 13.8000 | 24.15 | 13.80 |
| SO2 | Criteria Pollutant | 350 | 400,000 | 0.0033 | 0.056 | 1.1550 | 0.6600 | 19.6000 | 11.2000 | 19.60 | 11.20 |
| NOx | Criteria Pollutant | 350 | 400,000 | 0.03 | 0.075 | 10.5000 | 6.0000 | 26.2500 | 15.0000 | 26.25 | 15.00 |
| CO | Criteria Pollutant | 350 | 400,000 | 0.056 | 0.036 | 19.6000 | 11.2000 | 12.6000 | 7.2000 | 19.60 | 11.20 |
| Acetaldehyde | Hazardous Air Pollutant | 350 | 400,000 | - | 0.0013 | - | - | 0.4550 | 0.2600 | 0.46 | 0.26 |
| Benzene | Hazardous Air Pollutant | 350 | 400,000 | 0.0012 | 0.00041 | 0.4200 | 0.2400 | 0.1435 | 0.0820 | 0.42 | 0.24 |
| Ethylbenzene | Hazardous Air Pollutant | 350 | 400,000 | 0.00029 | 0.00038 | 0.1015 | 0.0580 | 0.1330 | 0.0760 | 0.13 | 0.08 |
| Toluene | Hazardous Air Pollutant | 350 | 400,000 | 0.0002 | 0.00075 | 0.0700 | 0.0400 | 0.2625 | 0.1500 | 0.26 | 0.15 |
| Xylene | Hazardous Air Pollutant | 350 | 400,000 | 0.0004 | 0.00016 | 0.1400 | 0.0800 | 0.0560 | 0.0320 | 0.14 | 0.08 |
| Formaldehyde | Hazardous Air Pollutant | 350 | 400,000 | 0.0036 | 0.0024 | 1.2600 | 0.7200 | 0.8400 | 0.4800 | 1.26 | 0.72 |

Emissions from Heater (E-002)

AP-42, HMA Plant Emission Factor Sheet
 Ap-42, Section 1.3 and 1.4, Fuel Oil Combustion and Natural Gas Combustion

| | Emission Factors | |
|-----------------|---|------------------------------------|
| | Piped Natural Gas (lb/10 ⁶ scf) | No. 2 Fuel Oil (lb/1000 gal FO) |
| PM-TSP | 7.6 | 2 |
| PM10 | 7.6 | 1.08 |
| VOC | 5.5 | 0.34 |
| SO ₂ | 0.6 | 71 |
| NO _x | 100 | 20 |
| CO | 84 | 5 |
| Acetaldehyde | - | - |
| Benzene | 0.0021 | 0.000214 |
| Ethylbenzene | - | 0.0000636 |
| Toluene | 0.0034 | 0.0062 |
| Xylene | - | 0.000109 |
| Formaldehyde | 0.075 | 0.033 |

(142S @ 0.5% S of FO weight)

Hours of Operation per Year 8760 hours

| Emission Type | Description | Throughput | | Emission Factor | | PNG Emissions | | #2FO Emissions | | Maximum Emissions | |
|-----------------|-------------------------|--------------|------------|------------------------------|-----------------------|---------------|-----------|----------------|-----------|-------------------|----------|
| | | PNG (scf/hr) | #2FO (gph) | PNG (lb/10 ⁶ scf) | #2FO (lb/1000 gal FO) | lb/hr | tpy | lb/hr | tpy | lb/hr | tpy |
| PM-TSP | Criteria Pollutant | 1000 | 7.25 | 7.6 | 2 | 0.0076 | 0.0333 | 0.0145 | 0.0635 | 0.01 | 0.06 |
| PM10 | Criteria Pollutant | 1000 | 7.25 | 7.6 | 1.08 | 0.0076 | 0.0333 | 0.0078 | 0.0343 | 0.01 | 0.03 |
| VOC | Criteria Pollutant | 1000 | 7.25 | 5.5 | 0.34 | 0.0055 | 0.0241 | 0.0025 | 0.0108 | 0.01 | 0.02 |
| SO ₂ | Criteria Pollutant | 1000 | 7.25 | 0.6 | 71 | 0.0006 | 0.0026 | 0.5148 | 2.2546 | 0.51 | 2.25 |
| NO _x | Criteria Pollutant | 1000 | 7.25 | 100 | 20 | 0.1000 | 0.4380 | 0.1450 | 0.6351 | 0.15 | 0.64 |
| CO | Criteria Pollutant | 1000 | 7.25 | 84 | 5 | 0.0840 | 0.3679 | 0.0363 | 0.1588 | 0.08 | 0.37 |
| Acetaldehyde | Hazardous Air Pollutant | 1000 | 7.25 | - | - | - | - | - | - | - | - |
| Benzene | Hazardous Air Pollutant | 1000 | 7.25 | 0.0021 | 0.000214 | 0.0000021 | 0.0000092 | 0.0000016 | 0.0000068 | 0.000002 | 0.000009 |
| Ethylbenzene | Hazardous Air Pollutant | 1000 | 7.25 | - | 0.0000636 | - | - | 0.0000005 | 0.0000020 | 0.0000005 | 0.000002 |
| Toluene | Hazardous Air Pollutant | 1000 | 7.25 | 0.0034 | 0.0062 | 0.0000034 | 0.0000149 | 0.0000450 | 0.0001969 | 0.00004 | 0.0002 |
| Xylene | Hazardous Air Pollutant | 1000 | 7.25 | - | 0.000109 | - | - | 0.0000008 | 0.0000035 | 0.0000008 | 0.000003 |
| Formaldehyde | Hazardous Air Pollutant | 1000 | 7.25 | 0.075 | 0.033 | 0.0000750 | 0.0003285 | 0.0002393 | 0.0010479 | 0.0002 | 0.0010 |

Uncontrolled and Controlled Emissions are the same

Emissions from Transfer Points

AP-42, 13.2.4 Aggregate Handling and Storage Piles (11/06)

E= Emission factor

$$E = k(0.0032) (U/5)^{1.3} / (M/2)^{1.4} \text{ lb/ton}$$

Equation (1)

Parameters

k= particle size multiplier

0.74

Aerodynamic Particle Size Multiplier for Eq. 1

U=mean wind speed (mph)

10 mph

Average wind speed

M=material moisture content (%)

2 %

Table 13.2.4-1; Stone quarrying and processing, Various limestone products

Calculated Emission Factor

PM-TSP 0.0058 lb/ton

| Transfer Point ID | Description | Throughput | | Emission Factor lb/ton | Uncontrolled Emissions | | Control Device | | Controlled Emissions | |
|---------------------|--|------------|---------|---------------------------|------------------------|--------|----------------|--------------|----------------------|-------------|
| | | tph | tpy | | lb/hr | tpy | ID | Efficiency % | lb/hr | tpy |
| TP1 | Loader to Bin | 350 | 400,000 | 0.0058 | 2.03 | 1.16 | PE | 50.0% | 1.015 | 0.58 |
| TP2 | Bin to Screen | 350 | 400,000 | 0.0058 | 2.03 | 1.16 | N | 0.0% | 2.03 | 1.16 |
| TP3 | Screen to Ground (Oversized Material)* | 0 | 0 | 0.0058 | 0 | 0 | N | 0.0% | 0 | 0 |
| TP4 | Screen to BC1 | 350 | 400,000 | 0.0058 | 2.03 | 1.16 | N | 0.0% | 2.03 | 1.16 |
| TP5 | BC1 to BC2 | 350 | 400,000 | 0.0058 | 2.03 | 1.16 | PE | 50.0% | 1.015 | 0.58 |
| TP6 | BC2 to BC3* | 0 | 0 | 0.0058 | 0 | 0 | PE | 50.0% | 0 | 0 |
| TP7 | BC3 to Ground* | 0 | 0 | 0.0058 | 0 | 0 | N | 0.0% | 0 | 0 |
| TP8 | S1 to Truck | 75 | 8000 | 0.0058 | 0.435 | 0.0232 | N | 0.0% | 0.435 | 0.0232 |
| TP9 | BH1 to S1 | 7 | 8000 | 0.0058 | 0.0406 | 0.0232 | BH | 99.9% | See E-001 | |
| TP10 | S1 to D1 | 7 | 8000 | 0.0058 | 0.0406 | 0.0232 | BH | 99.9% | See E-001 | |
| TOTAL TSP | | | | | | | | | 6.53 | 3.50 |
| TOTAL PM10** | | | | | | | | | 3.11 | 1.67 |

* Transfer Points at 0 tph are not part of the worst case emissions scenario

**PM10 =(PM-TSP)/2.1

Emissions from Screening

E= Emission factor

| | |
|---------------|-------------|
| PM-TSP | PM10 |
| 0.025 | 0.0087 |

lb/ton

G40-B Emissions Calculation Spreadsheet, AP-42 5th Edition 8/04

| Emission Type | Throughput | | Emission Factor lb/ton | Uncontrolled Emissions | | Control Device | | Controlled Emissions | |
|---------------|------------|---------|---------------------------|------------------------|-------|----------------|--------------|----------------------|------|
| | tph | tpy | | lb/hr | tpy | ID | Efficiency % | lb/hr | tpy |
| PM-TSP | 350 | 400,000 | 0.025 | 8.750 | 5.000 | PE | 50.00% | 4.38 | 2.50 |
| PM10 | 350 | 400,000 | 0.0087 | 3.045 | 1.740 | PE | 50.00% | 1.52 | 0.87 |

Asphalt Silo Loading (ASL) - Transfer of HMA from D1 to SLC1, TC1, S2 and/or S3

V = -0.5
T = 325 °F

| Emission Factors (lb/ton HMA) | | |
|-------------------------------|-----------|--|
| PM-TSP | 0.000586 | $E_{PM-TSP} = 0.000332 + 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ |
| VOC | 0.012187 | $E_{VOC} = E_{TOC} = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ |
| CO | 0.001180 | $E_{CO} = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$ |
| | | % $E_{HAP} = E_{TOC} * \%_{HAP}$ |
| Benzene | 3.900E-06 | 0.032% |
| Ethylbenzene | 4.631E-06 | 0.038% |
| Toluene | 7.556E-06 | 0.062% |
| Xylene | 3.132E-05 | 0.257% |
| Formaldehyde | 8.409E-05 | 0.690% |

AP-42, 11.1 Hot Mix Asphalt Plants (3/04)

Table 11.1-14, footnote a

Table 11.1-14, footnote a

Table 11.1-14, Silo filling

Table 11.1-14 and Table 11.1-16, Silo filling

Table 11.1-14, Silo filling

Table 11.1-16, Silo filling, footnote a

| Emission Type | Description | Throughput | | Emission Factor (lb/ton HMA) | Uncontrolled Emissions | |
|---------------|-------------------------|------------|-----------|---------------------------------|------------------------|--------|
| | | HMA (TPH) | HMA (TPY) | | lb/hr | tpy |
| PM-TSP* | Criteria Pollutant | 350 | 400,000 | 0.000586 | 0.21 | 0.12 |
| VOC | Criteria Pollutant | 350 | 400,000 | 0.012187 | 4.27 | 2.44 |
| CO | Criteria Pollutant | 350 | 400,000 | 0.001180 | 0.41 | 0.24 |
| Benzene | Hazardous Air Pollutant | 350 | 400,000 | 3.900E-06 | 0.0014 | 0.0008 |
| Ethylbenzene | Hazardous Air Pollutant | 350 | 400,000 | 4.631E-06 | 0.0016 | 0.0009 |
| Toluene | Hazardous Air Pollutant | 350 | 400,000 | 7.556E-06 | 0.0026 | 0.0015 |
| Xylene | Hazardous Air Pollutant | 350 | 400,000 | 3.132E-05 | 0.0110 | 0.0063 |
| Formaldehyde | Hazardous Air Pollutant | 350 | 400,000 | 8.409E-05 | 0.0294 | 0.0168 |

*PM-TSP= PM10=PM2.5

Asphalt Truck Loading (ATL) - Transfer of HMA from S2 and/or S3 to Truck

V = -0.5
T = 325 °F

| Emission Factors (lb/ton HMA) | | |
|-------------------------------|-----------|---|
| PM-TSP | 0.000522 | $E_{PM-TSP} = 0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ |
| VOC | 0.003909 | $E_{VOC} = E_{TOC} * 0.94 = 0.0172(-V)e^{((0.0251)(T+460)-20.43)} * 0.94$ |
| CO | 0.001349 | $E_{CO} = 0.00558(-V)e^{((0.0251)(T+460)-20.43)}$ |
| | | % $E_{HAP} = E_{TOC} * \%_{HAP}$ |
| Benzene | 2.033E-06 | 0.052% |
| Ethylbenzene | 1.095E-05 | 0.280% |
| Toluene | 8.210E-06 | 0.210% |
| Xylene | 1.916E-05 | 0.490% |
| Formaldehyde | 3.440E-06 | 0.088% |

AP-42, 11.1 Hot Mix Asphalt Plants (3/04)

Table 11.1-14, footnote a

Table 11.1-14, footnote a

Table 11.1-14, Plant load-out

Table 11.1-14 and Table 11.1-16, Plant load-out

Table 11.1-14, Plant load-out

Table 11.1-16, Plant load-out, footnote a

| Emission Type | Description | Throughput | | Emission Factor (lb/ton HMA) | Uncontrolled Emissions | |
|---------------|-------------------------|------------|-----------|------------------------------|------------------------|--------|
| | | HMA (TPH) | HMA (TPY) | | lb/hr | tpy |
| PM-TSP* | Criteria Pollutant | 350 | 400,000 | 0.000522 | 0.18 | 0.10 |
| VOC | Criteria Pollutant | 350 | 400,000 | 0.003909 | 1.37 | 0.78 |
| CO | Criteria Pollutant | 350 | 400,000 | 0.001349 | 0.47 | 0.27 |
| Benzene | Hazardous Air Pollutant | 350 | 400,000 | 2.033E-06 | 0.0007 | 0.0004 |
| Ethylbenzene | Hazardous Air Pollutant | 350 | 400,000 | 1.095E-05 | 0.0038 | 0.0022 |
| Toluene | Hazardous Air Pollutant | 350 | 400,000 | 8.210E-06 | 0.0029 | 0.0016 |
| Xylene | Hazardous Air Pollutant | 350 | 400,000 | 1.916E-05 | 0.0067 | 0.0038 |
| Formaldehyde | Hazardous Air Pollutant | 350 | 400,000 | 3.440E-06 | 0.0012 | 0.0007 |

*PM-TSP= PM10=PM2.5

**Material Handling is a Total of Transfer Points,
Screening, Asphalt Silo Loading and Asphalt Truck
Loading Emissions**

| | lb/hr | tpy |
|--------------|--------|--------|
| TOTAL TSP | 11.30 | 6.22 |
| TOTAL PM10 | 5.02 | 2.76 |
| VOC | 5.64 | 3.22 |
| CO | 0.88 | 0.51 |
| Benzene | 0.0021 | 0.0012 |
| Ethylbenzene | 0.0054 | 0.0031 |
| Toluene | 0.0055 | 0.0031 |
| Xylene | 0.0177 | 0.0101 |
| Formaldehyde | 0.0306 | 0.0175 |

Attachment J:
Class I Legal Advertisement

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Greer Industries, Inc. dba Buckeye Asphalt Company has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a General Permit Registration Modification for a Hot Mix Asphalt Plant located on 442 Blaney Hollow Road, near Morgantown, in Monongalia County, West Virginia.

The applicant estimates the increased potential to discharge the following Regulated Air Pollutants will be:

| Pollutant | tons/year |
|------------------|------------------|
| PM-TSP | 2.40 |
| PM ₁₀ | 0.70 |
| VOC | 3.21 |
| SO ₂ | -0.01 |
| NO _x | 0.00 |
| CO | 0.51 |
| Acetaldehyde | 0.00 |
| Benzene | 0.00 |
| Ethylbenzene | 0.00 |
| Toluene | 0.00 |
| Xylene | 0.01 |
| Formaldehyde | 0.02 |

Startup of operation began on or about November 2000. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1227, during normal business hours.

Dated this the 3rd day of June, 2016.

By: Greer Industries, Inc. dba Buckeye Asphalt Co.
J. Robert Gwynne
Executive Vice President
8477 Veterans Memorial Highway
Masontown, WV 26542

| | Current Permitted PTE (2000 Application) | New PTE (2016 Application) | Change in PTE |
|-----------------------|---|---------------------------------------|----------------------|
| Pollutant | tons/yr | tons/yr | tons/yr |
| PM-TSP | 17.322 | 19.72 | 2.40 |
| PM10 | 10.881 | 11.58 | 0.70 |
| VOC | 13.83 | 17.04 | 3.21 |
| SO₂ | 13.46 | 13.45 | -0.01 |
| NO_x | 15.64 | 15.64 | 0.00 |
| CO | 11.57 | 12.08 | 0.51 |
| Acetaldehyde | 0.26 | 0.26 | 0.00 |
| Benzene | 0.24 | 0.24 | 0.00 |
| Ethylbenzene | 0.08 | 0.08 | 0.00 |
| Toluene | 0.15 | 0.15 | 0.00 |
| Xylene | 0.08 | 0.09 | 0.01 |
| Formaldehyde | 0.721 | 0.74 | 0.02 |

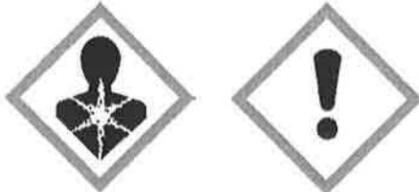
Attachment N:
Safety Data Sheets

**GREER INDUSTRIES, INC.
SAFETY DATA SHEET (SDS)**

Section I – Product and Company Identification

| Product Identification | Manufacturer | 24-Hour Emergency Contact No. | Recommended Use |
|--|---|--|---|
| Blacktop; Hot Mix Asphalt; Asphalt; Bituminous Concrete CAS No: N/A | Greer Industries, Inc. 8477 Veterans Memorial Hwy Masontown, WV 26542 | (800) 773-0412 or (304) 296-2549 | Surfacing for roadways, driveways, parking lots, or walkways. |

Section II – Hazards Identification

| | |
|---------------------------------|---|
| Health Hazards | Carcinogenicity (Category 1) Skin Irritation (Category 2) Serious Eye Irritation (Category 2A) Specific Target Organ Toxicity Repeated Exposure: Respiratory System (Cat. 1) Specific Target Organ Toxicity Single Exposure: Respiratory System (Cat. 3) |
| Pictograms |  |
| Signal Word | Danger |
| Hazard Statements | Causes skin irritation. Causes serious eye irritation. May cause cancer through inhalation. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure through inhalation. |
| Precautionary Statements | Keep out of reach of children. Do not breathe dust or fumes. Use only outdoors or in a well-ventilated area. Wear protective gloves and eye protection. Wash exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Dispose of contents or containers in accordance with applicable regulations. IF ON SKIN: In case of contact with hot product, remove contaminated clothing and cool immediately by immersing the impacted skin in cool water. For contact with product when not hot, wash and rinse skin thoroughly. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately. |

| | |
|---|---|
| | <p>IF INHALED: Remove person to fresh air and keep at rest and comfortable.</p> <p>IF SWALLOWED: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit.</p> <p>If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage or other discomfort persist: Get medical attention.</p> |
| Other Hazards not covered by GHS | None |

Section III – Composition / Information on Ingredients

| INGREDIENTS (Specific Chemical Identity; Common Names) | CAS REGISTRY NO. | % By Weight (Approx) |
|---|--------------------------|---------------------------------|
| Aggregate (Limestone) | 1317-65-3 | >90 |
| Asphalt Cement (Bitumen) ⁽¹⁾ | 8052-42-4 ⁽²⁾ | <10 |
| Silica (Si), Crystalline Quartz | 14808-60-7 | >1 |

(1): See Asphalt Cement Manufacturer SDS for more information

(2): CAS No. for Asphalt

Section IV – First Aid Measures

| | |
|---------------------|---|
| Inhalation | Move to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration. |
| Ingestion | Drink large quantities of water. Seek medical attention immediately. |
| Skin Contact | Remove excess material from skin and flush the affected area with plenty of water. Remove contaminated clothing and wash before reuse. Seek medical attention if irritation occurs. |
| Eye Contact | Immediately flush eyes with large amounts of water for at least 15 minutes. Seek medical attention immediately. |

Section V – Firefighting Measures

| | |
|---|---|
| Extinguishing Method | Not flammable. Use dry chemical fire extinguisher or water fog sprays. |
| Special Firefighting Equipment and Precautions | Do not use straight streams of water, as this may cause violent eruption of hot asphalt. Respirators may be necessary to prevent inhalation of fumes or vapors. |
| Specific Hazards in Case of Fire | Fire may produce irritating or toxic gases from incomplete combustion. |

Section VI – Accidental Release Measures

| | |
|------------------------------------|--|
| Initial Actions to Be Taken | Ventilate the area around the accidental release and remove all unnecessary personnel. |
| Cleaning Methods | Contain product with sand or soil. Collect in suitable containers for disposal. |

Section VII – Handling and Storage

| | |
|--|--|
| Waste Disposal Method | Dispose of product in accordance with Federal, State, and Local regulations. |
| Precautions to be Taken during Handling/Storage | Use product as intended only. Avoid contact with skin, eyes, or clothing. Store product in a well-ventilated area. |

Section VIII – Exposure Controls / Personal Protection

| | | |
|----------------------------------|--|-------------------------|
| Respiratory Protection | NIOSH approved dust filter mask as minimal protection | |
| Ventilation | Local Exhaust | To maintain TLV and PEL |
| | Mechanical | To maintain TLV and PEL |
| | Special | None |
| | Other | None |
| Protective Gloves | Gauntlets cuff style insulated gloves | |
| Eye Protection | Shielded glasses or fitted goggles to reduce the chance of eye injury | |
| Other Protective Clothing | Clothing fully covering skin. | |
| Work / Hygienic Practices | Maintain dust exposure limits below TLV and PEL. If not possible, use respiratory protection. Avoid contact with eyes and skin. Wash thoroughly after handling. Wash clothing after contact. | |

| INGREDIENTS | OSHA PEL⁽¹⁾ | ACGIH TLV⁽²⁾ |
|--|--|--------------------------------|
| Calcium Carbonate (CaCO ₃) | (T) 15 mg/m ³ | (T) 10 mg/m ³ |
| Silica (Si), Crystalline Quartz | (T) [30 mg/m ³ / (SiO ₂ + 2)] (R) [10 mg/m ³ / (SiO ₂ + 2)] | (R) 0.05 mg/m ³ |
| Asphalt Cement (Bitumen) | - | (I) 0.5 mg/m ³ |

(T): Total; (R): Respirable; (I): Inhalable

(1) OSHA PEL: Occupational Safety and Health Administration, Permissible Exposure Limit is the time weighted average exposure for an 8-hr work shift of a 40-hr workweek.

(2) ACGIH TLV: American Conference of Governmental Industrial Hygienists, Threshold Limit Value is the time weighted average recommended concentration for an 8-hr work shift of a 40-hr workweek.

Section IX – Physical and Chemical Properties

| | |
|---|---|
| Appearance | Black, semi-solid, tar-like material with dispersed aggregate |
| Odor and Threshold | Mild petroleum or characteristic asphalt odor |
| pH | N/A |
| Melting Point | 200 °F |
| Boiling Point | < 878 °F |
| Flash Point | > 450 °F and not flammable |
| Evaporation Rate | < 0.01 (Ether = 1) |
| Flammability | N/A |
| Explosive Limits | N/A |
| Vapor Pressure | < 0.1 @ 68 °F |
| Vapor Density | >5 (Air = 1) |
| Specific Gravity | 1.03 |
| Solubility | Negligible |
| Partition Coefficient: n-octanol/water | N/A |
| Autoignition Temperature | 905 °F |
| Decomposition Temperature | No Data Available |

Section X – Stability and Reactivity

| | |
|--|---|
| Stability | Chemically stable |
| Incompatibility – Conditions to Avoid | Avoid high temperatures and sources of ignition. Strong oxidizing agents should not be mixed with this product. Agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Avoid mixing with volatile solvents. |
| Hazardous Decomposition Products | Thermal decomposition of the material may release carbon monoxide, carbon dioxide, hydrogen sulfide, nitrogen dioxide, and other organic and inorganic compounds into the atmosphere. Some thermal decomposition may occur during paving operations. |
| Hazardous Polymerization | Not known to polymerize. |

Section XI – Toxicological Information

| | |
|------------------------|--|
| Acute Effects | Skin Contact: May cause irritation. Eye Contact: May cause irritation. Inhalation: May cause lung irritation and inflammation to mucus membranes and respiratory passages |
| Chronic Effects | May cause irritation, ulceration, and perforation of nasal septum. Asphalt is not found to be toxic. It is not listed by MSHA, OSHA, or IARC as a carcinogen. This product may contain Crystalline Silica which has been classified as carcinogenic to humans when inhaled in the form of Quartz, Crystobalite, and/or Tridymite. Long-term exposure to crystalline silica may result in silicosis, lung cancer, or other respiratory diseases |
| Acute Toxicity | IDLH – Humans 25 mg/m ³ (Crystobalite and Tridymite), 50 mg/m ³ (Quartz and Tripoli) Oral LD50 – Rat >5000 mg/kg (Asphalt) Dermal LD50 – Rabbit > 2000 mg/kg (Asphalt) Inhalation LD50 – Rat 4 hrs >94.4 mg/m ³ (Asphalt) |

Section XII – Ecological Information

| | |
|--------------------------------------|---|
| Ecotoxicity | No Data Available |
| Persistence and Degradability | Not expected to be readily biodegradable. |
| Bioaccumulative Potential | Not expected to bioaccumulate in aquatic organisms. |
| Mobility in Soil | Not likely to be very mobile in soil or water. |
| Other Adverse Effects | No Information Available. |

Section XIII – Disposal Considerations

Dispose of unused material in accordance with the Federal, State, and Local disposal requirements.

Section XIV – Transport Information

Hot Mixed Asphalt is not classified as a hazardous material by the Department of Transportation (DOT). Disposal of product may be subject to state, federal, or local laws and regulations.

Section XV – Regulatory Information

| | |
|--|-----------------------|
| EPA, RCRA Hazardous Waste Classification (40CFR261) | Not Listed |
| EPA, RCRA Hazardous Waste Number (40CFR261.33) | Not Listed |
| EPA, CERCLA Hazardous Substance (40CFR261) | Not Listed |
| EPA, CERCLA Reportable Quantity (RQ) | Not Listed |
| EPA, SARA 311/312 Codes | Not Listed |
| EPA, SARA Toxic Chemical (40CFR372.65) | Not Listed |
| EPA, SARA EHS (Extremely Hazardous Substance (40CFR355) | Not Listed |
| EPA Threshold Planning Quantity (TPQ) | Not Listed |
| EPA, TSCA Inventory List | All Components Listed |
| OSHA, Air Contaminant (29CFR1910.1000, Table Z-1) | Not Listed |
| OSHA, Specifically Regulated Substance (29CFR1910) | Not Listed |
| MSHA | Not Listed |
| State Regulations – Consult state and local authorities for guidance | See Note |
| Canadian Environmental Protection Act, Domestic Substances List | Listed |

Section XVI – Other Information

| | |
|-----------------------------|--|
| Revision Information | This SDS was issued on 8/17/15. All previous versions are obsolete |
| WARNING | This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. |
| CANADA - WHMIS | Asphalt is an uncontrolled product. |
| Disclaimer | The technical data presented herein is given as information only and is assumed to be reliable. Greer Industries, Inc. assumes no responsibility for any inaccuracies or for any damage or injury that may occur during the use of this information. |

**GREER INDUSTRIES, INC.
 SAFETY DATA SHEET (SDS)**

Section I – Product and Company Identification

| Product Identification | Manufacturer | 24-Hour Emergency Contact No. | Recommended Use |
|--|---|--|---|
| Limestone; Crushed Stone; Aggregate; Limestone Sand; Calcium Carbonate; CaCO ₃ CAS No: 1317-65-3 | Greer Industries, Inc. 8477 Veterans Memorial Highway Masontown, WV 26542 | (800) 773-0412 or (304) 296-2549 | Construction, aggregate, chemical feedstock, soil conditioner, flue gas desulfurization, etc. |

Section II – Hazards Identification

| | |
|---------------------------------|---|
| Health Hazards | Skin Irritation (Category 3) Eye Irritation (Category 2B) Carcinogenicity (Category 1) Specific Target Organ Toxicity Single Exposure: Respiratory System (Cat 3) Specific Target Organ Toxicity Repeated Exposure: Respiratory System (Cat 1) |
| Pictograms |  |
| Signal Word | Danger |
| Hazard Statements | Causes mild skin irritation. Causes eye irritation. May cause respiratory irritation. May cause cancer through inhalation. Causes damage to lungs through prolonged/repeated exposure by inhalation. |
| Precautionary Statements | Keep out of reach of children. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wear protective gloves, eye protection, and respiratory protection. Wash exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Dispose of contents or containers in accordance with applicable regulations. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep at rest and comfortable. If skin or eye irritation occurs: Get medical advice. If exposed and concerned: Get medical advice. Call a doctor or emergency medical provider if you feel unwell. |

| | |
|----------------------------------|------|
| Other Hazards not covered by GHS | None |
|----------------------------------|------|

Section III – Composition / Information on Ingredients

| INGREDIENTS (Specific Chemical Identity; Common Names) | CAS REGISTRY NO. | % By Weight (Approx) |
|---|------------------|-------------------------|
| Calcium Carbonate (CaCO ₃) | 471-34-1 | >70 |
| Magnesium Carbonate (MgCO ₃) | 546-93-0 | <5 |
| Silicon Dioxide (SiO ₂), Amorphous | 7631-86-9 | <40 |
| Silica (Si), Crystalline Quartz | 14808-60-7 | >1 |
| Aluminum Oxide (Al ₂ O ₃) | 1344-28-1 | <5 |
| Iron Oxide (Fe ₂ O ₃) | 1309-37-1 | <3 |

Section IV – First Aid Measures

| | |
|--------------|--|
| Inhalation | Move to fresh air. Contact a physician. |
| Ingestion | Drink large quantities of water. Contact a physician. |
| Skin Contact | Wash with soap and water |
| Eye Contact | Immediately flush eyes with large amounts of water. Contact a physician. |

Section V – Firefighting Measures

| | |
|--|--|
| Extinguishing Method | Not flammable |
| Special Firefighting Equipment and Precautions | No unusual fire or explosion hazards noted. Not a combustible dust. |
| Specific Hazards in Case of Fire | None known. |

Section VI – Accidental Release Measures

| | |
|-----------------------------|---|
| Initial Actions to Be Taken | Ventilate the area around the accidental release and remove all unnecessary personnel. |
| Cleaning Methods | Normal clean-up procedures. Care should be taken to avoid causing dust to become airborne. Vacuum cleaning systems recommended. |

Section VII – Handling and Storage

| | |
|---|--|
| Waste Disposal Method | Dispose of product in accordance with Federal, State, and Local regulations. |
| Precautions to be Taken during Handling/Storage | Store away from incompatible chemicals and acids. |

Section VIII – Exposure Controls / Personal Protection

| | | |
|---------------------------|---|-------------------------|
| Respiratory Protection | NIOSH approved dust filter mask as minimal protection | |
| Ventilation | Local Exhaust | To maintain TLV and PEL |
| | Mechanical | To maintain TLV and PEL |
| | Special | None |
| | Other | None |
| Protective Gloves | Gloves discretionary | |
| Eye Protection | Shielded glasses or fitted goggles to reduce the chance of eye injury | |
| Other Protective Clothing | None | |

| | |
|----------------------------------|---|
| Work / Hygienic Practices | Maintain dust exposure limits below TLV and PEL. If not possible, use respiratory protection. Avoid contact with eyes and skin. |
|----------------------------------|---|

| INGREDIENTS | OSHA PEL ⁽¹⁾ | ACGIH TLV ⁽²⁾ |
|--|--|---|
| Calcium Carbonate (CaCO ₃) | (T) 15 mg/m ³ | (T) 10 mg/m ³ |
| Magnesium Carbonate (MgCO ₃) | (T) 15 mg/m ³ | (T) 10 mg/m ³ |
| Silicon Dioxide (SiO ₂), Amorphous | (T) [80 mg/m ³ / (%SiO ₂)] | (I) 10 mg/m ³ (R) 3 mg/m ³ |
| Silica (Si), Crystalline Quartz | (T) [30 mg/m ³ / (SiO ₂ + 2)] (R) [10 mg/m ³ / (SiO ₂ + 2)] | (R) 0.05 mg/m ³ |
| Aluminum Oxide (Al ₂ O ₃) | (T) 15 mg/m ³ (R) 5 mg/m ³ | (T) 10 mg/m ³ |
| Iron Oxide (Fe ₂ O ₃) | (T) 10 mg/m ³ | (T) 5 mg/m ³ |

(T): Total; (R): Respirable; (I): Inhalable

- (1) OSHA PEL: Occupational Safety and Health Administration, Permissible Exposure Limit is the time weighted average exposure for an 8-hr work shift of a 40-hr workweek.
 (2) ACGIH TLV: American Conference of Governmental Industrial Hygienists, Threshold Limit Value is the time weighted average recommended concentration for an 8-hr work shift of a 40-hr workweek.

Section IX – Physical and Chemical Properties

| | |
|---|---|
| Appearance | Light to dark gray solid |
| Odor and Threshold | None |
| pH | 9.2 to 9.4 in saturated water solution at 25 °C |
| Melting Point | Decomposes at 1,750 °F (loses CO ₂) |
| Initial Boiling Point | 5,162 °F |
| Flash Point | N/A |
| Evaporation Rate | N/A |
| Flammability | Product not flammable |
| Explosive Limits | No data available |
| Vapor Pressure | 0.0 mm Hg |
| Vapor Density | N/A |
| Relative Density | 2.7 - 2.8 |
| Solubility | Negligible |
| Partition Coefficient: n-octanol/water | No data available |
| Autoignition Temperature | No data available |
| Decomposition Temperature | 1,750 °F |

Section X – Stability and Reactivity

| | |
|--|-----------------------------------|
| Stability | Chemically stable. |
| Incompatibility – Conditions to Avoid | Acids, Fluorine |
| Hazardous Decomposition Products | Calcium oxide and carbon dioxide. |
| Hazardous Polymerization | None |

Section XI – Toxicological Information

| | |
|------------------------|--|
| Acute Effects | Skin Contact: May cause irritation Eye Contact: May cause irritation Inhalation: May cause lung irritation |
| Chronic Effects | Limestone is not found to be toxic. It is not listed by MSHA, OSHA, or IARC as a carcinogen. This product may contain Crystalline Silica which has been classified as carcinogenic to humans when inhaled in the form of Quartz, Crystobalite, and/or Tridymite. Long-term exposure to crystalline silica may result in silicosis, lung cancer, or other respiratory diseases |
| Acute Toxicity | LD50 Oral – Rat 6,450 mg/kg IDLH – Humans 25 mg/m ³ (Crystobalite and Tridymite), 50 mg/m ³ (Quartz and Tripoli) |

Section XII – Ecological Information

| | |
|--------------------------------------|---|
| Ecotoxicity | Due to the elevated pH of the product, upon exposure to specific aquatic organisms and aquatic systems, it may cause some ecotoxicity in high concentrations. |
| Persistence and Degradability | No data available |
| Bioaccumulative Potential | This material shows no bioaccumulation potential. |
| Mobility in Soil | No data available |
| Other Adverse Effects | Due to the material's alkalinity, if released into water or moist soil will cause an increase in pH. |

Section XIII – Disposal Considerations

| |
|--|
| Dispose of unused material in accordance with the Federal, State, and Local disposal requirements. |
|--|

Section XIV – Transport Information

| |
|--|
| Limestone is not classified as a hazardous material by the Department of Transportation (DOT). |
|--|

Section XV – Regulatory Information

| | |
|--|-----------------------|
| EPA, RCRA Hazardous Waste Classification (40CFR261) | Not Listed |
| EPA, RCRA Hazardous Waste Number (40CFR261.33) | Not Listed |
| EPA, CERCLA Hazardous Substance (40CFR261) | Not Listed |
| EPA, CERCLA Reportable Quantity (RQ) | Not Listed |
| EPA, SARA 311/312 Codes | Not Listed |
| EPA, SARA Toxic Chemical (40CFR372.65) | Not Listed |
| EPA, SARA EHS (Extremely Hazardous Substance (40CFR355) | Not Listed |
| EPA Threshold Planning Quantity (TPQ) | Not Listed |
| EPA, TSCA Inventory List | All Components Listed |
| OSHA, Air Contaminant (29CFR1910.1000, Table Z-1) | Listed |
| OSHA, Specifically Regulated Substance (29CFR1910) | Not Listed |
| MSHA | Not Listed |
| State Regulations – Consult state and local authorities for guidance | See Note |
| Canadian Environmental Protection Act, Domestic Substances List | Listed |

Section XVI – Other Information

| | |
|-------------------------------|--|
| HMIS III Safety Rating | Health – 1; Flammability – 0; Physical Hazard – 0; Protective Equipment - A |
| Revision Information | This SDS was revised on 7/1/15. All previous versions are obsolete |
| WARNING | This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. |
| CANADA - WHMIS | Classification D2A (Toxic) |
| Disclaimer | The technical data presented herein is given as information only and is assumed to be reliable. Greer Industries, Inc. assumes no responsibility for any inaccuracies or for any damage or injury that may occur during the use of this information. |

Attachment O:
Emissions Summary Sheets

HMA PLANT CRITERIA POLLUTANT EMISSION SUMMARY SHEET

| Company Name <u>Buckeye Asphalt Co.</u> | | Registration Number (Agency Use) G20-B | | | | | | | | | | |
|--|-------------|---|------------------|------------|-------------|------------|-----------------|------------|-----------------|------------|-------------|------------|
| Maximum Yearly Production <u>400,000</u> tons/year | | Maximum Design Production Rate <u>350</u> tons/hour | | | | | | | | | | |
| Source | PM | | PM ₁₀ | | VOC | | SO ₂ | | NO _x | | CO | |
| | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr |
| Haulroads ¹ | 5.44 | 9.51 | 2.59 | 4.53 | | | | | | | | |
| Materials Handling ² | 6.22 | 11.30 | 2.76 | 5.02 | 3.22 | 5.64 | | | | | 0.51 | 0.88 |
| Dryer ³ | 8.00 | 14.00 | 6.20 | 10.85 | 13.80 | 24.15 | 11.20 | 19.60 | 15.00 | 26.25 | 11.20 | 19.60 |
| Asphalt Heater ⁴ | 0.06 | 0.01 | 0.03 | 0.01 | 0.02 | 0.01 | 0.01 | 2.25 | 0.64 | 0.15 | 0.37 | 0.08 |
| TOTAL | 19.72 | 34.82 | 11.58 | 20.41 | 17.04 | 29.80 | 13.45 | 20.11 | 15.64 | 26.40 | 12.08 | 20.56 |

1. Enter the potential to emit of PM and PM₁₀ associated with vehicular activity on haulroad(s). Use appropriate emission factors and calculations from the Criteria Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.

2. Enter the potential to emit of PM and PM₁₀ associated with the transfer of aggregate from stockpiles to HMA production equipment. Use appropriate emission factors and calculations from the Criteria Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.

3. Enter the potential to emit of PM, PM₁₀, VOC, SO₂, NO_x and CO associated with the HMA production equipment (rotary dryer for batch plants or dryer/drum mixer for mix plants). Use appropriate emission factors and calculations from the Criteria Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.

4. Enter the potential to emit of PM, PM₁₀, VOC, SO₂, NO_x and CO associated with the asphalt heater(s). Use appropriate emission factors and calculations from the Criteria Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.

HMA PLANT HAZARDOUS/TOXIC POLLUTANT EMISSION SUMMARY SHEET

| Company Name | | Buckeye Asphalt Co | | | | | | | | | | Registration Number (Agency Use) G20-B | | | |
|-----------------------------|--------------|--------------------|-------------|------------|--------------|------------|-------------|------------|-------------|------------|--------------|--|--|---------------|--|
| Maximum Yearly Production | | 400,000 tons/year | | | | | | | | | | Maximum Design Production Rate | | 350 tons/hour | |
| Source | Acetaldehyde | | Benzene | | Ethylbenzene | | Toluene | | Xylene | | Formaldehyde | | | | |
| | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | PTE tons/yr | PTE lbs/hr | | | |
| Dryer ¹ | 0.26 | 0.46 | 0.24 | 0.42 | 0.08 | 0.08 | 0.15 | 0.26 | 0.08 | 0.14 | 0.72 | 1.26 | | | |
| Asphalt Heater ² | NA | NA | 0.000009 | 0.000002 | 0.000002 | 0.000005 | 0.0002 | 0.00004 | 0.000003 | 0.000008 | 0.0010 | 0.0002 | | | |
| Material Handling | NA | NA | 0.0012 | 0.0021 | 0.0031 | 0.0054 | 0.0031 | 0.0055 | 0.0101 | 0.0177 | 0.0175 | 0.0306 | | | |
| TOTAL | 0.26 | 0.46 | 0.24 | 0.42 | 0.08 | 0.14 | 0.15 | 0.27 | 0.09 | 0.16 | 0.74 | 1.29 | | | |

1. Enter the potential to emit of acetaldehyde, benzene, ethylbenzene, toluene, xylene and formaldehyde associated with the HMA production equipment (rotary dryer for batch plants or dryer/drum mixer for mix plants). Use appropriate emission factors and calculations from the Hazardous/Toxic Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.

2. Enter the potential to emit of acetaldehyde, benzene, ethylbenzene, toluene, xylene and formaldehyde associated with the asphalt heater(s). Use appropriate emission factors and calculations from the Hazardous/Toxic Pollutant Emission Factor Sheet. Attach potential emission calculations to this Emission Summary Sheet.