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BAQ PERMITTING

Air Permit # 2060-0665

Construction Air Permit Application
River Bend Aggregates, LLC
Pacolet, South Carolina

PREPARED FOR:

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November 2023



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1.0 Introduction

River Bend Aggregates, LLC (RBA) is submitting this application to obtain a construction permit for a proposed aggregate mine and processing facility near Pacolet, Spartanburg County, SC (see Figure 1). The facility does not have an assigned street address yet but will be forthcoming. This is a new plant that is designed to process 550 ton per hour of stone and aggregates. A site layout of the facility is provided in Figure 2.

Since the RBA facility does not fall within one of the specific 28 categories subject to a Prevention of Significant Deterioration threshold, the applicable major source threshold for the facility is 250 tons/year. The potential total uncontrolled total particulate matter emissions will be greater than 250 tons per year; therefore, RBA is requesting that the facility be permitted as a synthetic minor source. All other uncontrolled criteria pollutants are below 250 tons/year.

The remainder of this application is organized as follows:

- ◆ Section 2 - Process Description
- ◆ Section 3 - Emission Sources and Controls
- ◆ Section 4 - Emissions Determination
- ◆ Section 5 - Regulatory Review
- ◆ Appendix A - SCDHEC-BAQ Air Permit Application Forms
- ◆ Appendix B - Emission Calculations
- ◆ Appendix C – Air Dispersion Modeling Results and Modeling Output Files

2.0 Process Description

The processes for the proposed RBA facility include the following operations. A process flow diagram is provided in Figure 3.

- ◆ Material handling (transportation at the facility);
- ◆ Material processing (crushing, screening, and conveying); and
- ◆ Material storage (on-site stockpiles).

RBA proposes to locate the aggregate mine and processing facility near Pacolet, South Carolina. The process starts inside the pit where the stone will be mined and transported in trucks using plant haul roads. The stone will be dumped into the vibrating grizzly feeder which feeds the primary jaw crushing station where stone will be initially crushed and conveyed to additional processing using vibrating screens and conveyors and additional crushers (secondary and tertiary). Lastly, the material will be transferred to trucks from one of the storage piles and the trucks will exit the site using the haul roads. Emissions from the aggregate handling, processing and storage will consist of the criteria pollutants particulate matter (PM), PM with an aerodynamic diameter of less than or equal to 10 microns (PM10), and PM with an aerodynamic diameter of less than or equal to 2.5 microns (PM2.5).

There will be two diesel powered pumps (one 60 HP and one 100 HP) that will be used for supplying fresh water and removing process water.



3.0 Emission Sources and Controls

The facility wide uncontrolled and controlled emissions are provided in the table below and the detailed emission calculations and supporting documentation are presented in Appendix B. Wet suppression will be the primary method for method for controlling the PM/PM10/PM2.5 emissions onsite.

Parameter		Emissions, tons per year				
		Engines	Aggregate Processing and Material Handling	Stockpiles	Unpaved Roads	Total
PM	Potential Uncontrolled		360	0.44	76.98	437.7
	Potential Controlled		28	0.44	7.70	36.2
PM10	Potential Uncontrolled	1.54	132	0.22	22.72	156.1
	Potential Controlled	1.54	10	0.22	2.27	14.2
PM2.5	Potential Uncontrolled		20.01	0.02	2.27	22.3
	Potential Controlled		1.63	0.02	0.227	1.9
NOx	Potential Uncontrolled	5.61				5.6
CO	Potential Uncontrolled	4.68				4.7
SOx	Potential Uncontrolled	1.44				1.4
Aldehyde	Potential Uncontrolled	0.32				0.3
VOC	Potential Uncontrolled	1.73				1.7

3.1 Emission Sources and Controls: Material Handling

Material handling will include transportation to the processing plant and off-site transportation of finished product. RBA will prepare and operate using a fugitive dust control plan to minimize fugitive dust emissions. Wet suppression will be used to control the PM/PM10/PM2.5 emissions on the site haul roads. PM/PM10/PM2.5 emissions will occur during operation of haul trucks throughout the site.

3.2 Emission Sources and Controls: Material Processing

3.2.1 Crushers

One primary jaw crusher (CR101), a secondary cone crusher (CR102), and a tertiary cone crusher (CR103) will be used for crushing stone into various sizes. Wet suppression will be utilized to reduce the PM/PM10/PM2.5 emissions.

3.2.2 Screens

Four vibratory screens (SCR101 through SCR104) and a vibrating grizzly feeder (VGF101) will be used at the processing plant for separating material based on particle size. Wet suppression will be utilized to reduce PM/PM10/PM2.5 emissions.



3.2.3 Conveyors

Approximately 40-45 conveyors will be used to move stone and aggregate in the processing plant. Wet suppression will be utilized to reduce the PM/PM10/PM2.5 emissions.

3.3 Emission Sources and Controls: Material Storage

Processed aggregate will be stored in 8 separate stockpiles around the processing plant. The stockpiles will be subject to windblown PM/PM10/PM2.5 emissions and wet suppression will be used to control the fugitive emissions from these stockpiles.

3.4 Emission Sources and Controls: Diesel Engines

Two pumps with diesel engines will be used for pumping freshwater (WP101) and process water (SP101). WP101 is rated at 100 horsepower and SP101 is rated at 60 horsepower. Emissions will include PM, nitrogen oxides (NO_x), sulfur dioxide (SO₂), carbon monoxide (CO), and volatile organic compounds (VOC).

4.0 Emissions Determination

Facility wide emissions are provided in Table 1. The detailed emission calculations and supporting tables are presented in Appendix B.

4.1 Emissions: Material Handling

PM10 and PM2.5 emissions were estimated based on the following equation obtained from USEPA's AP-42: Compilation of Air Emission Factors, Section 13.2.2.

$$E = k(s/12)^a \left(\frac{W}{3}\right)^b \left(365 - \frac{P}{365}\right) \text{ where:}$$

- k - empirical constant (PM: 4.9, PM10: 1.5, PM2.5: 0.15)
- s - surface material silt content (10%)
- a - empirical constant (PM: 0.7, PM10: 0.9, PM2.5: 0.9)
- W - mean vehicle weight (64 tons)
- b - empirical constant (0.45)
- P - number of days with > 0.01 in. of precipitation (102)

An efficiency of 90% was used for the wet suppression control. The calculated emissions for haul roads are summarized in Table 5 in Appendix B.

4.2 Emissions: Material Processing

PM10 and PM2.5 emissions for processing equipment (crushers, screens, and conveyors) were estimated by utilizing representative analog emission factors taken from USEPA's AP-42: Compilation of Air Emission Factors. The chosen emission factors, their corresponding AP-42 Chapters, and PM10 and PM2.5 emission calculations are shown in Table 3.



4.3 Emissions: Aggregate Storage

Emissions for windblown PM10 and PM2.5 were estimated based on the following equation obtained from USEPA's Control of Open Fugitive Dust Sources (1988).

$$E = 1.7 \left(\frac{s}{1.5} \right) \left(365 - \frac{p}{235} \right) \left(\frac{f}{15} \right) \text{ where:}$$

- s - silt content, %: (1.6)
- p - number of days with > 0.01 in. of precipitation (102)
- f - percentage of time unobstructed wind speed exceeds 12 mph at the mean pile height (10%)

The calculated emissions for haul roads are summarized in Table 4 in Appendix B.

4.4 Emissions: Diesel Engines

The emissions from the diesel-powered pumps were calculated using the emissions factors contained in AP-42, Chapter 3, Gasoline and Diesel Engines, Table 3.3-1. The calculated emissions for the two engines are summarized in Table 5 in Appendix B.

5.0 Regulatory Review

5.1 Federal Regulations

5.1.1 *New Source Performance Standards (40 CFR 60)*

5.1.1.1 Subpart 000 – Nonmetallic Mineral processing Plants

This New Source Performance Standard (NSPS) applies to nonmetallic mineral processing plants that commenced construction, modification, or reconstruction after August 31, 1983.

A nonmetallic mineral processing plant is defined as any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, aggregates concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 (b) and (c). RBA will handle and crush nonmetallic minerals as defined in Subpart 000 and therefore, the aggregates mine and processing facility is subject to this standard.

Each crusher, screen, and conveyor is subject to the rule. Subpart 000 does not apply to drilling, non-enclosed truck loading, or storage piles as those sources are not listed in §60.670(a). Since the facility is comprised entirely of fugitive emissions, only the fugitive particulate matter emission limits and compliance requirements of Table 2 and §60.672(b) apply. Table 3 of Subpart 000 lists the following requirements that are applicable to a facility that will commence construction after April 22, 2008:

- 7 percent opacity for conveyor transfer points and screens
- 12 percent opacity for crushers.
- Periodic inspections of water sprays per §60.674 (b)



- Reporting and recordkeeping requirements of water sprays under §60.676

5.1.1.2 Subpart IIII – Stationary Compression Ignition Internal Combustion Engines

The NSPS for stationary compression ignition internal combustion engines, as outlined in 40 CFR Part 60, Subpart 1111, specifies standards to reduce PM, NO_x, CO, and non-methane hydrocarbons (NMHC) emissions.

The facility will be utilizing diesel powered pumps that will not be subject to Subpart IIII since the generator will be a nonroad engine. 40 CFR Part 1068.30 states "(1) a nonroad engine is any internal combustion engine: (iii) that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indications of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform."

Since the diesel pumps are portable and will be moved and will not remain at a location for more than 12 consecutive months, the pumps meet the standard.

5.1.1.3 Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines

The NSPS for stationary spark ignition internal combustion engines (Subpart JJJJ) specifies standards to reduce NO_x, CO, and VOC emissions. RBA will not have any stationary spark ignition internal combustion engines onsite; therefore, this standard does not apply.

5.1.2 *National Emission Standards for Hazardous Air Pollutants (40 CFR 63)*

40 CFR Part 63 establishes technology-based regulations for specific source categories emitting any of the 187 compounds designated by the EPA as HAPs. The EPA regulates emissions of HAPs from major and area sources as promulgated under a NESHAP. Facilities that are required to demonstrate compliance with a particular NESHAP must employ Maximum Achievable Control Technology (MACT) as specified in the regulation.

Under 40 CFR Part 63, a major source is defined as any stationary source emitting 10 tpy or more of any individual HAP, or 25 tpy or more of any combination of HAPs. An area source of HAPs is a facility that is not a major source of HAPs, is not located at a major source, and is not part of a major source of HAP emissions.

Since the facility will not emit any HAPs, none of the 40 CFR Part 63 standards apply to RBA. The diesel pumps are not subject to 40 CFR Part 63 Subpart ZZZZ for the same reason as they are not subject to 40 CFR Part 60 Subpart IIII. Therefore, these standards do not apply to this facility.

5.1.3 *Compliance Assurance Monitoring (40 CFR 64)*

The facility will not be a major source, therefore, this regulation will not be applicable.

5.2 **State Regulations**

5.2.1 *SC Regulation 61-62.1*

The facility's uncontrolled PTE for total PM has been determined to be greater than 250 TPY; therefore, RBA will install wet suppression throughout the site to reduce the PM/PM10/PM2.5 PTE to less than 250 TPY. The



uncontrolled PTE for all other criteria pollutants is less than 250 TPY. Therefore, RBA is requesting to be permitted as a synthetic minor source.

The detailed emission calculations are provided in Tables 1-5 in Appendix B.

5.2.2 SC Regulation 61-62.5 Standard No. 1 – Emissions from Fuel Burning Operations

The South Carolina Emissions from Fuel Burning Operations Standard (R.61-62.5, Standard No. 1) establishes standards for fuel burning operations including limitations on visible emissions, PM emissions, and sulfur dioxide (SO₂) emissions (Sections I, II, and III, respectively). There are no fuel burning operations associated with the proposed aggregates mining and processing operations at RBA. Therefore, this standard does not apply to the site.

5.2.3 SC Regulation 61-62.5 Standard No. 2 – Ambient Air Quality Standards

According to this Standard, facility-wide emissions of criteria pollutants must not cause or contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS). Compliance with this Standard has been demonstrated through air dispersion modeling. Section 6.0 provides the air dispersion modeling results and compliance with the NAAQS.

5.2.4 SC Regulation 61-62.5 Standard No. 4 – Emissions from Process Industries

Allowable PM emissions were calculated using the process weight rate equation provided in Standard No. 4. The results are provided below.

$$E = (55.0p^{0.11} - 40) \text{ where}$$

- E = allowable particulate emission rate in pounds per hour (calculated to be 70 lbs/hr)
- F = effect factor (1)
- P = process weight rate in tons per hour (550 tons per hour)

In addition, RBA will comply with an opacity limitation of 20% as stated in the Standard.

5.2.5 SC Regulation 61-62.5 Standard No. 5 – Control of VOCs

This Standard does not apply because nonmetallic mining is not one of the listed processes.

5.2.6 SC Regulation 61-62.5 Standard No. 5.2 – Control of Oxides of Nitrogen

Under Section I(B)(1), the diesel engines are exempt from the requirements in this Standard.

5.2.7 SC Regulation 61-62.5 Standard No. 7 – Prevention of Significant Deterioration

RBA has implemented PM/PM₁₀/PM_{2.5} emission controls to ensure the site-wide controlled emissions are below 250 TPY; therefore, the facility will be classified as a synthetic minor source and not subject to this standard.



5.2.8 SC Regulation 61-62.5 Standard No. 8 – Toxic Air Pollutants

Standard No. 8 states that the concentration of TAPs at the facility boundary cannot exceed the maximum allowable ambient concentrations as specified in the Standard. This facility does not emit HAPs and TAPs and is therefore not subject to this standard.

5.2.9 SC Regulation 61-62.6 – Control of Fugitive Particulate Matter

Fugitive PM emissions shall be handled in a manner that will minimize fugitive dust. RBA will utilize wet suppression throughout the site to control fugitive PM/PM10/PM2.5 emissions.

6.0 Air Dispersion Modeling

As noted in Table 1 (Appendix B), the potential PM10 and PM2.5 emissions from the facility exceeded 5 tons/year; therefore, RBA is required to demonstrate compliance with ambient air standards outlined in Regulation 61-62.5 Standard No. 2. The following potential criteria pollutants from the facility were determined to be exempt from modeling as outlined in Table 2.1 of the SCDHEC Modeling Guidelines for Air Quality Permits, October 2018.

- CO - <10 lb/hour or 5 tons/year
- SO2 - <1.14 lb/hour or 5 tons/year
- NOx - <1.14 lb/hour or 5 tons/year (engine emissions individually were less than 5 tons/year).

Table 6 in Appendix C provides the potential pollutant emission rates as compared to their modeling thresholds. All modeling for the aforementioned pollutants was performed using their maximum PTE emission rates and conducted in accordance with the SCDHEC Modeling Guidelines for Air Quality Permits, October 2018

6.1 Model Selection

Air dispersion modeling was conducted using the AERMOD model, which is an EPA-approved regulatory model for performing refined analyses. The AERMOD model was run using the regulatory default options, rural land use setting, and the full 5-year preprocessed meteorological data set provided by the SCDHEC using GSP Surface Data (Station 3870) and Greensboro Upper Air (Station 13723). Figure 2 illustrates the property boundary and plant layout.

6.2 Source Type

Most of the processing emissions and material transfer points are fugitive emission sources (screeners, conveyors, stockpiles) and were modelled as area sources. The individual NOx and CO emissions from the 100 HP and 60 HP engines were less than 5 tons/year and 10 tons/year, respectively, and therefore were not included in the modeling analysis per Section 2.2.3 of the SCDHEC Air Modeling Guidelines. The release parameters for the emission sources are summarized in Table 7 in Appendix C.

6.3 Good Engineering Practice (GEP) Analysis

The only two buildings onsite are the Scale House and the Shop. These building dimensions were incorporated into the AERMOD model using the BPIP-Prime tool to account for the potential impact of building wake effects;



however, no downwash impacts were determined since there are no point sources. The building parameters are provided in Table 8 in Appendix C.

6.4 Meteorological Data

The modeling was performed using the full 5-year preprocessed meteorological data provided by the SCDHEC with GSP Surface Station 3870 and Greensboro Upper Air Station 13723. Below is a description of the meteorological data used for this analysis.

Pollutant	AERMOD Rank	Met Data Period	AERMOD Met File	Met Data Type
PM10 24 hour	6th high	2015 - 2019	5-year concatenated	USTAR
PM2.5 Annual	1st high	2015 - 2019	5-year concatenated	USTAR
PM2.5 24 hour	8th high	2015 - 2019	5-year concatenated	USTAR

6.5 Receptors

Receptors were located at the nearest property line from each emission source at 50-meter intervals and spaced at 100-meter intervals out to 1500 meters. The receptor grid utilized in this modeling analysis is provided in Figure 4.

6.6 Terrain Elevations

Receptor elevations were extracted from the National Elevation Dataset (NED) provided by the SCDHEC website <https://gis.dhec.sc.gov/aermod/>. The AERMOD Terrain Pre-processor AERMAP was used to extract NED elevations for receptors. The receptor grid utilized in this modeling analysis is provided in Figure 4.

6.7 Results

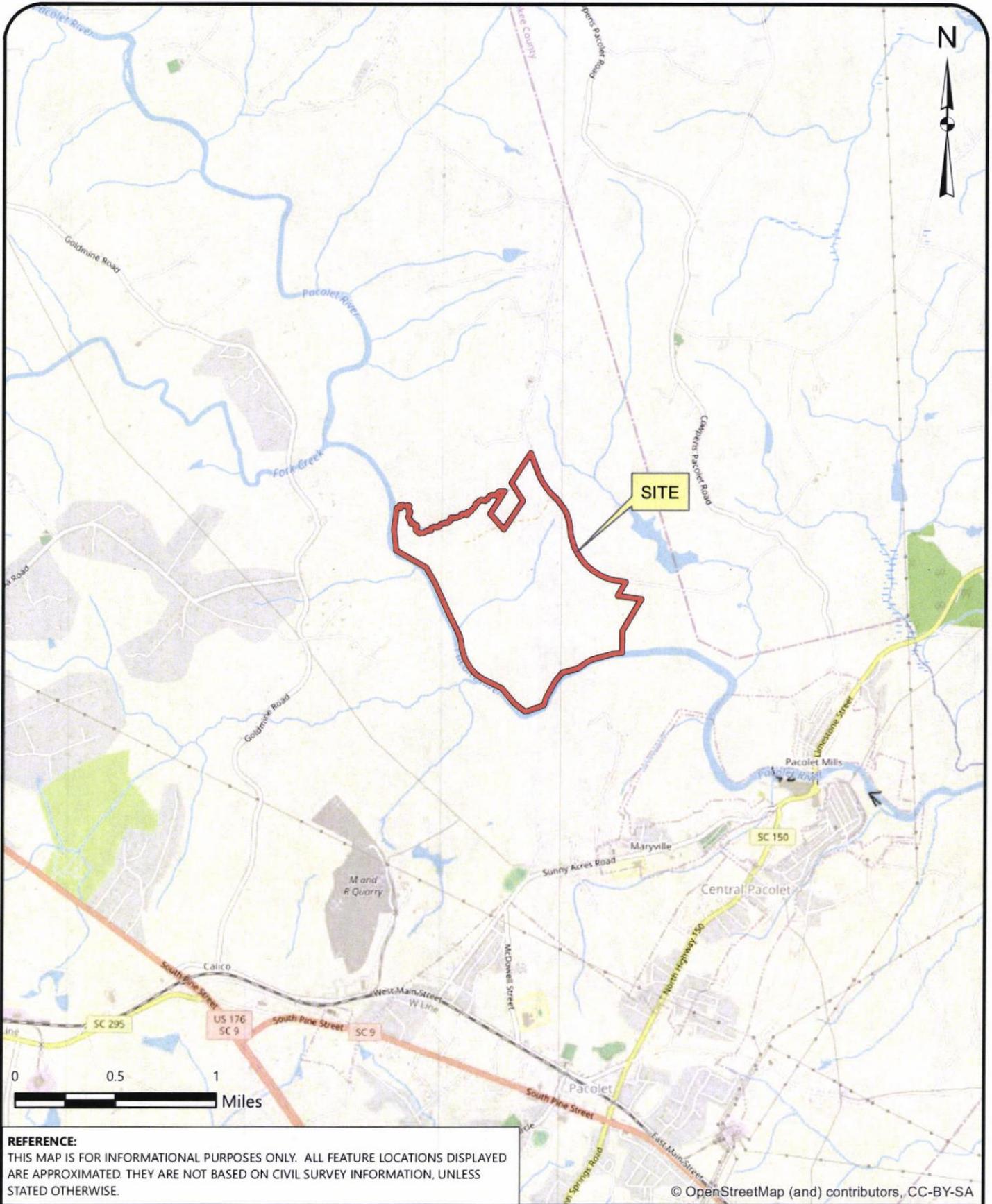
Compliance with the PM10 and PM2.5 ambient air quality standards was demonstrated by adding the modeled concentrations to the appropriate PM10 and PM2.5 background concentrations and comparing the total to the appropriate pollutant/averaging time period standard. The PM10 and PM2.5 concentrations are provided in Table 9 (Appendix C) and the background concentrations selected for the site are summarized in Table 10 (Appendix C). Compliance with the requirements under SCDHEC Standard No. 2 is summarized in Table 11 (in Appendix C).

The AERMOD electronic modeling files will be attached with the electronic submission (Appendix C) and will also be provided on a USB drive in the printed copy.



6.8 Conclusion

The modeling results demonstrate that the predicted worst-case PM10 and PM2.5 emissions for the RBA facility will not exceed the ambient air standards under South Carolina Regulation 61-62.5 Standard No. 2. The facility has demonstrated that it will operate in compliance with these standards.



Drawing Path: C:\arcgis\TPS_pacolet\figure 1 site location map.mxd

REFERENCE:
 THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

© OpenStreetMap (and) contributors, CC-BY-SA

	SITE LOCATION MAP		SCALE: AS NOTED	FIGURE NO. 1
	RIVER BEND AGGREGATES, LLC HAMMETT GROVE ROAD SPARTANBURG COUNTY, SOUTH CAOLINA		DATE: OCTOBER 2023 PROJECT NUMBER 22610504	



RIVER BEND AGGREGATES, LLC
 HAMMETT GROVE ROAD
 SPARTANBURG COUNTY, SOUTH CAROLINA

PLANT AREA

SCALE:
 1" = 83'

DATE:
 NOVEMBER 2023

PROJECT NUMBER:
 22610504

FIGURE NO.:

3



Secondary and Tertiary Crushers

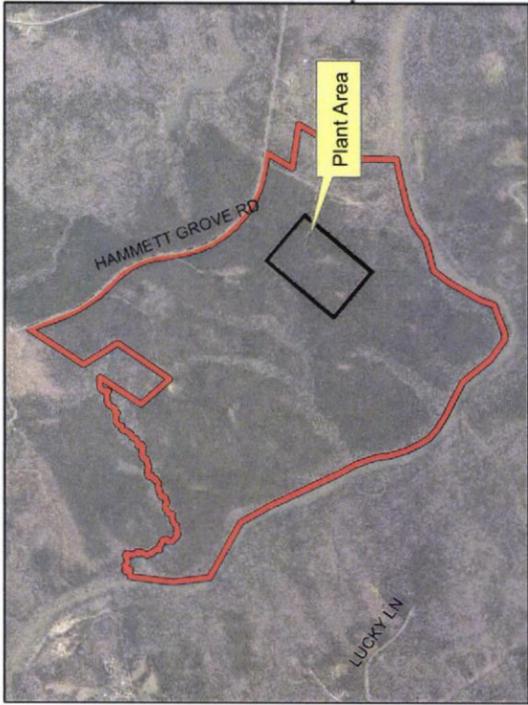
Stockpile (Typical)

Conveyor (Typical)

Primary Crusher



Legend
 Permit Boundary



REFERENCE:
 THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



RIVER BEND AGGREGATES, LLC
 HAMMETT GROVE ROAD
 SPARTANBURG COUNTY, SOUTH CAROLINA

MODELING GRID

SCALE:
 1" = 2,000'

DATE:
 NOVEMBER 2023

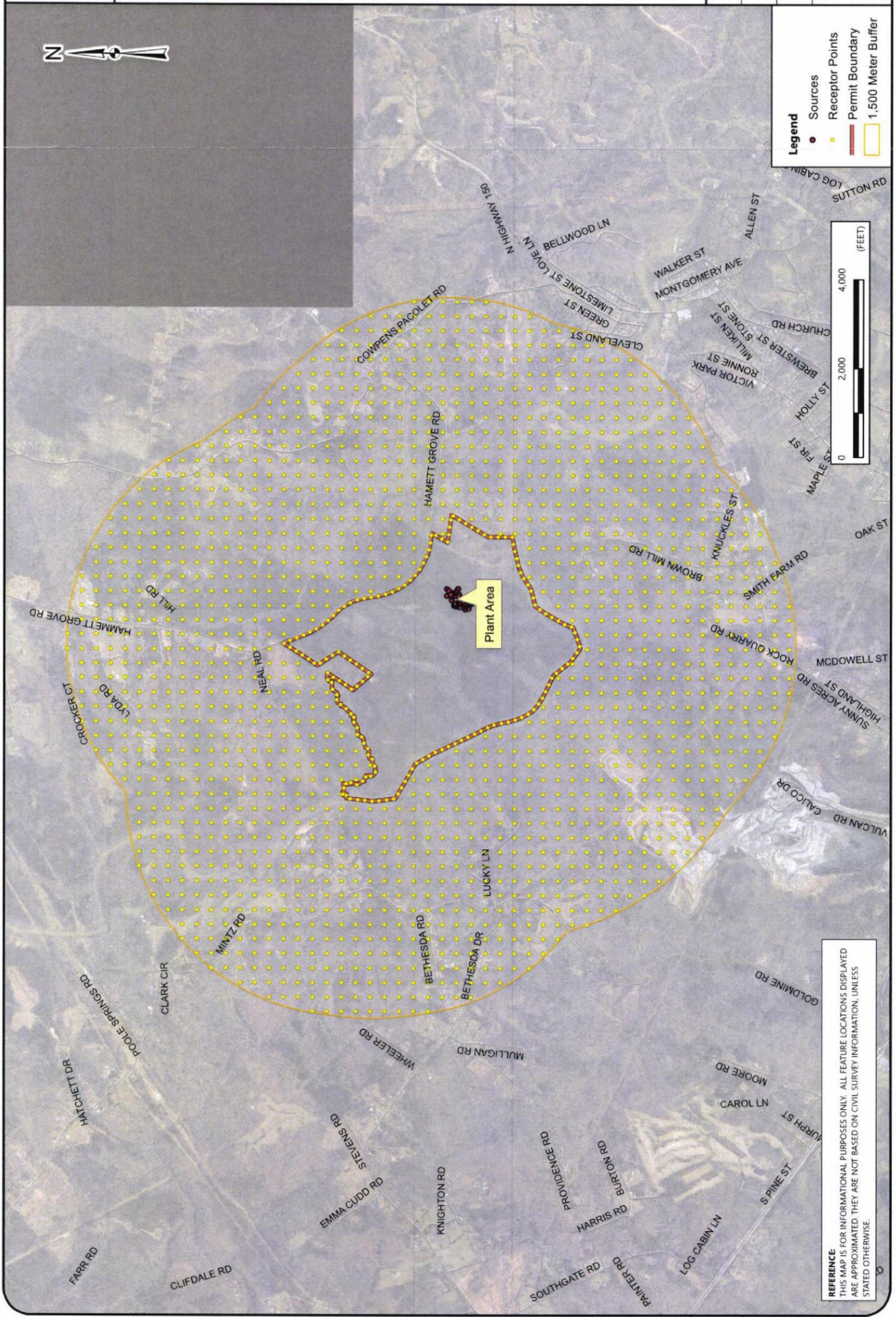
PROJECT NUMBER
 22610504

FIGURE NO.

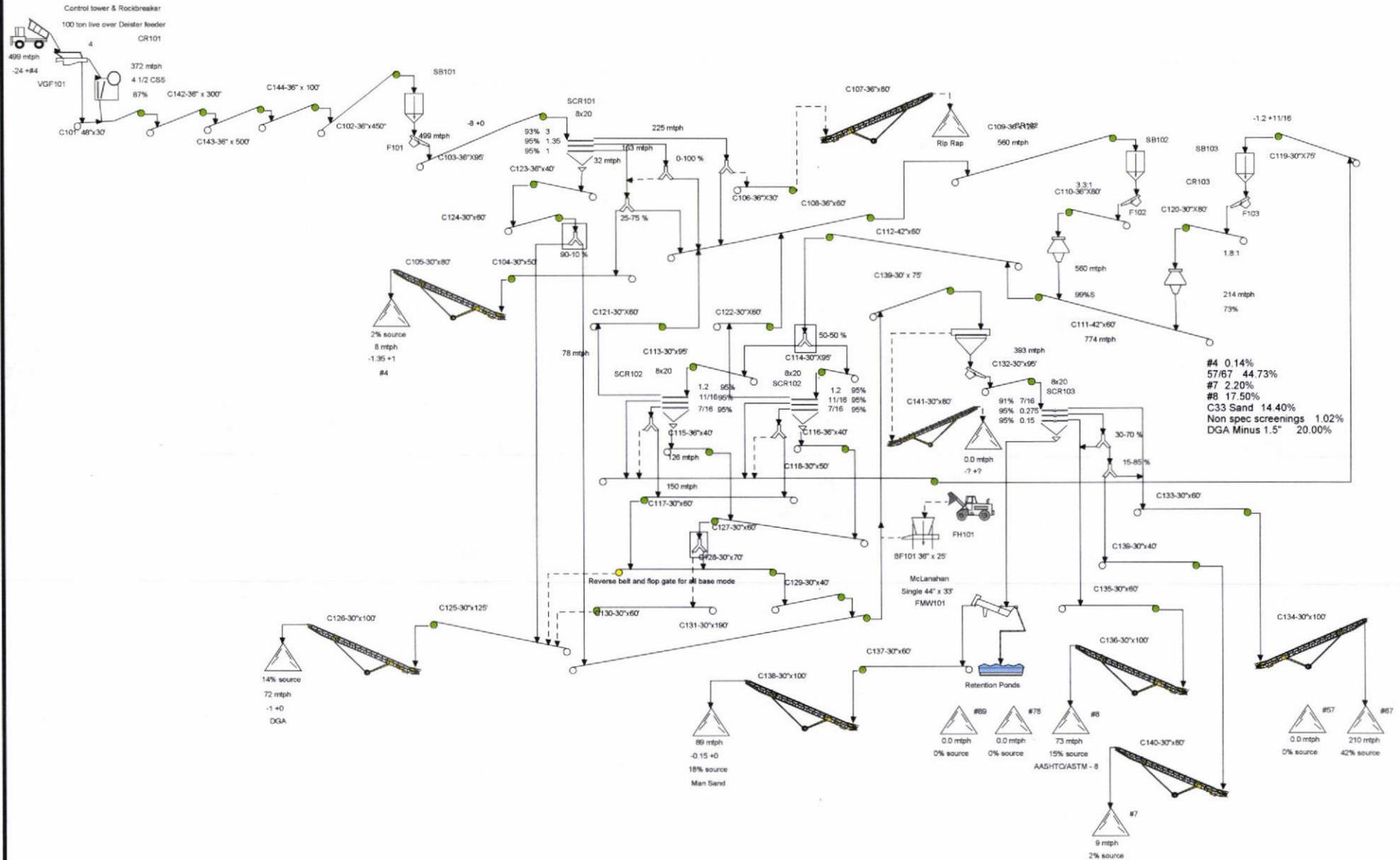
4



- Legend**
- Sources
 - Receptor Points
 - Permit Boundary
 - 1,500 Meter Buffer



REFERENCE:
 THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



Calculation results may differ due to variations in operating conditions and application of crushing and screening equipment. This information does not constitute an express or implied warranty, but shows results of calculations based on information provided by customers or equipment manufacturers. Use this information for estimating purposes only.
All calculations performed by AggFlow. <http://www.AggFlow.com>

Turnkey Processing Solutions

Pacolet SC

Tab Butler

Plant Stage #1:

Project #: 140121 Revision #: 774867

Date: October/6/2023



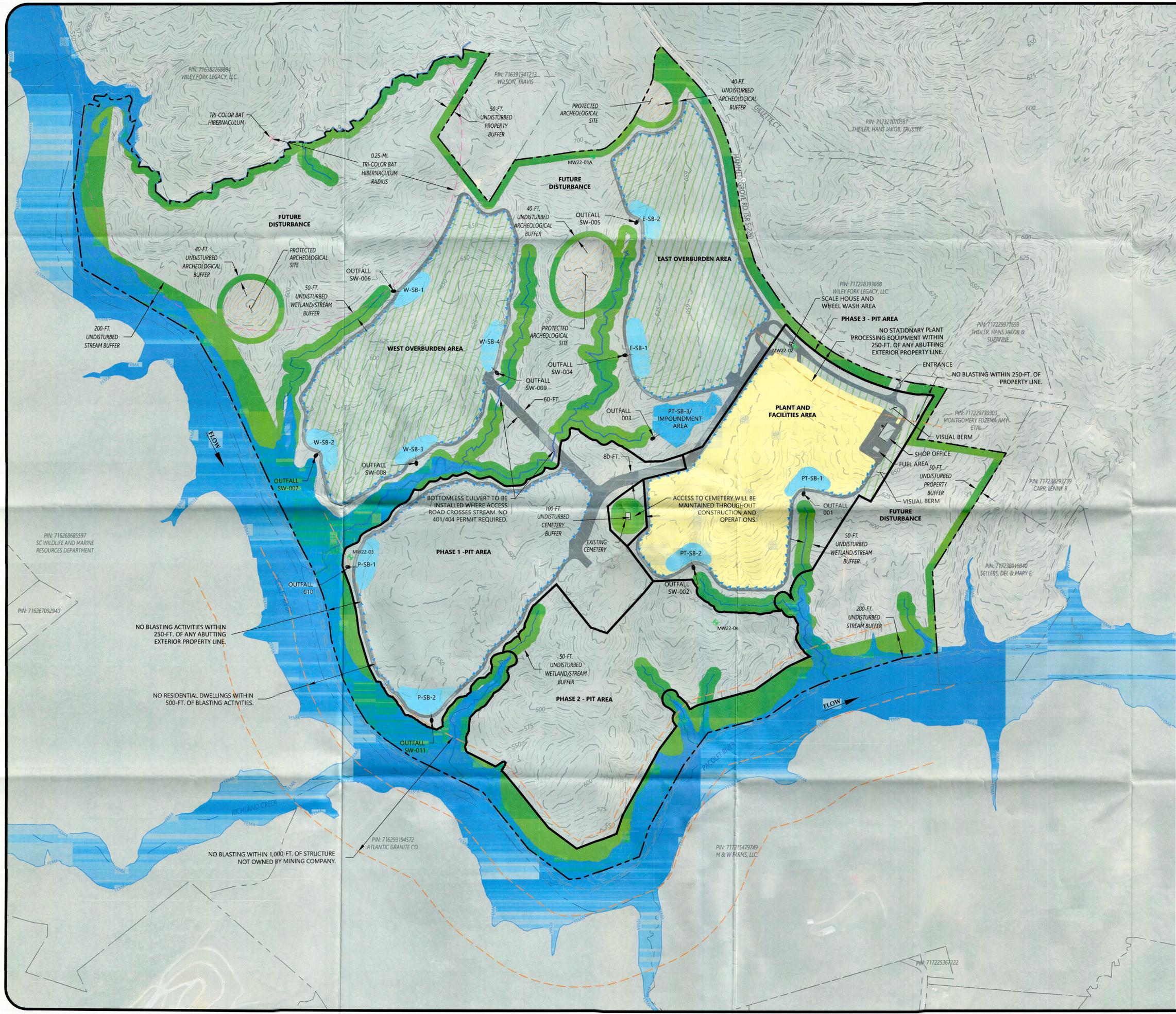
2016 AYRSLEY TOWN BLVD
SUITE 2-A
CHARLOTTE, NC 28273
(704) 534-4726
ENGINEERING FIRM
LICENSE NUMBER: F-0176

RIVER BEND AGGREGATES, LLC



NO.	DATE	ISSUED FOR CLIENT REVIEW	DESCRIPTION
1	10/16/2023	AW	CHK
2		AW	CHK
3		AW	CHK
4		AW	CHK
5		AW	CHK
6		AW	CHK
7		AW	CHK
8		AW	CHK
9		AW	CHK
10		AW	CHK

OVERALL SITE PLAN	
RIVER BEND QUARRY SITE - CONCEPTUAL PLAN	
RIVER BEND AGGREGATES, LLC	
SPARTANBURG COUNTY, SOUTH CAROLINA	
PROJECT NUMBER	22610504B
DRAWING NUMBER	2
	9



LEGEND

EXISTING FEATURES

- 420 --- EXISTING GRADE CONTOUR (25 FEET) (REF. 1)
- 5 FEET --- EXISTING GRADE CONTOUR (5 FEET) (REF. 1)
- PROPERTY LINE (REF. 2)
- PERMIT BOUNDARY
- PIT PHASE BOUNDARY
- MINING SETBACK (NOTE 1)
- STREAMS (NOTE 2)
- STREAM CENTERLINES (REF. 3)
- WETLANDS (NOTE 2)
- BUFFERS (NOTE 3)
- VEGETATED BERMS/BUFFER
- FEMA 100-YEAR FLOODPLAIN (REF. 4)
- PROTECTED ARCHEOLOGICAL SITE
- WATER LINE
- WATER MANHOLE
- TRI-COLOR BAT HIBERNACULUM RADIUS (NOTE 6)

PROPOSED FEATURES

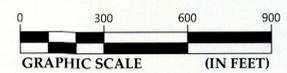
- SEDIMENT BASIN
- PRELIMINARY LOCATION OF OUTFALL AND PLUNGE POOL
- ACCESS/HAUL ROAD
- STORMWATER CHANNEL
- LONG TERM MONITORING WELL

GENERAL NOTES:

1. PER SECTION 6.X.3 OF THE TOWN OF PACOLET ZONING ORDINANCE, 250-FT. SETBACK REQUIRED FOR ALL STATIONARY PLANT PROCESSING EQUIPMENT FROM ANY ABUTTING EXTERIOR PROPERTY LINE. PER SECTION 6.X.5 OF THE TOWN OF PACOLET ZONING ORDINANCE, 250-FT. SETBACK REQUIRED FOR ALL BLASTING ACTIVITIES FROM ANY ABUTTING EXTERIOR PROPERTY LINE AND 500-FT. SETBACK TO ANY RESIDENTIAL DWELLING.
2. S&ME DELINEATED ON-SITE WATER FEATURES IN JANUARY 2023.
3. THE PROPERTY BUFFERS ON THE FRONT AND SIDES OF THE PROJECT ARE 50-FT. THE PROPERTY BUFFER ALONG THE REAR OF THE PROJECT IS 200-FT. THE STREAM AND WETLAND BUFFERS ARE 50-FT. THE ARCHEOLOGICAL SITE BUFFERS ARE 40-FT. THE CEMETERY BUFFER IS 100-FT.
4. PER REGULATION 89-150H OF THE SOUTH CAROLINA CODE SECTION 48-20-210, NO BLASTING MAY OCCUR WITHIN 250-FT. OF PROPERTY BOUNDARIES.
5. PER REGULATION 89-150I OF THE SOUTH CAROLINA CODE SECTION 48-20-210, NO BLASTING MAY OCCUR WITHIN 1,000-FT. OF A STRUCTURE NOT OWNED BY THE MINING COMPANY.
6. 0.25-MI. RADIUS FROM TRI-COLOR BAT HIBERNACULUM. FUTURE ACTIVITIES WILL BE PERFORMED PER ESA IN CONSULTATION WITH APPROPRIATE AGENCIES.

REFERENCE:

1. 2013 TOPOGRAPHIC CONTOURS DERIVED FROM SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES (SCDNR) SPATIAL DATA DOWNLOAD TOOL. THIS DIGITAL ELEVATION MODEL (DEM) IN SPARTANBURG COUNTY, SOUTH CAROLINA WAS CONVERTED INTO 1-FOOT CONTOURS USING ESRI ARCGIS SPATIAL ANALYST.
2. TAX PARCEL DATA OBTAINED FROM THE SPARTANBURG COUNTY, SOUTH CAROLINA GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEPARTMENTS.
3. HYDROLOGY DATA OBTAINED FROM THE NATIONAL HYDROGRAPHY DATASET (NHD).
4. FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) 100-YEAR FLOODPLAIN, FLOODWAY, AND BASE FLOOD ELEVATION (BFE) DATA OBTAINED FROM THE FEMA NATIONAL FLOOD HAZARD LAYER (NFHL) DATASET.
5. AERIAL ORTHOIMAGERY OBTAINED FROM SOUTH CAROLINA REVENUE AND FISCAL AFFAIRS.



DRAWING PATH: T:\Charlotte-1350\Projects\2023\22610504B_Synergy_Materials_Pacolet_Sc\Civil-Geo-Env\CAD\DWG\MINING SWPPP\OVERALL SITE PLAN.dwg

Appendices

Appendix A – SCDHEC-BAQ Air Permit Application Forms



**Bureau of Air Quality
Expedited Review Request
Construction Permits
Page 1 of 2**

RECEIVED
NOV 02 2023
BAQ PERMITTING

APPLICATION IDENTIFICATION	
Facility Site Name <i>(This should be the name used to identify the facility)</i> River Bend Aggregates, LLC	SC Air Permit Number (8-digits only) <i>(Leave blank if one has never been assigned)</i> -

PRIMARY AIR PERMIT CONTACT			
Title/Position: Vice President	First Name: Will	Last Name: Glusac	
E-mail Address: wglusac@turnkeyprocessing.com	Primary Phone No.: (630) 225-4606	Alternate Phone No.: () -	

SECONDARY AIR PERMIT CONTACT			
<i>(If the Department is unable to contact the primary air permit contact please provide a secondary contact.)</i>			
Title/Position: Project Manager	First Name: Ross	Last Name: Birkner	
E-mail Address: rbirkner@turnkeyprocessing.com	Primary Phone No.: (779) 230-0349	Alternate Phone No.: () -	

Check One	Permit Type	Expedited Review Days*	Fee**
<input type="checkbox"/>	Minor Source Construction Permit	30	\$3,000
<input checked="" type="checkbox"/>	Synthetic Minor Construction Permit	65	\$4,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) not impacting a Class I Area (no Class I modeling required)	120	\$20,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) Modification not impacting a Class I Area (no Class I modeling required) No BACT limit change but requires Public Notice	120	\$5,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) Modification not impacting a Class I Area (no Class I modeling required) Number of BACT Pollutants <input type="checkbox"/> X \$5,000 per BACT modification	120	Total Fee \$ Maximum of \$20,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) impacting a Class I Area (Class I modeling required)	150	\$25,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) Modification impacting a Class I Area (Class I modeling required) No BACT limit change but requires Public Notice	150	\$5,000
<input type="checkbox"/>	Prevention of Significant Deterioration (PSD) Modification impacting a Class I Area (Class I modeling required) Number of BACT Pollutants <input type="checkbox"/> X \$5,000 per BACT modification	150	Total Fee \$ Maximum of \$25,000
<input type="checkbox"/>	Concrete Minor Source Construction Permit	10	\$1,500
<input type="checkbox"/>	Concrete Synthetic Minor Construction Permit	15	\$2,500
<input type="checkbox"/>	Asphalt Synthetic Minor Construction Permit	15	\$3,500



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Expedited Review Request
Construction Permits
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*All days above are calendar days, but exclude State holidays, and building closure dates due to severe weather or other emergencies. Expedited days for asphalt and concrete also exclude weekends.

****DO NOT SEND PAYMENT UNTIL THE APPLICATION HAS BEEN ACCEPTED INTO THE EXPEDITED PROGRAM.**
If chosen for expedited review, you will be notified by phone for verbal acceptance into the program. Fees must be paid within five business days of acceptance.

PRIMARY AIR PERMIT CONTACT SIGNATURE

I have read the most recent version of the Expedited Review Program Standard Operating Procedures and accept all of the terms and conditions within. I understand that it is my responsibility to ensure an application of the highest quality is submitted in a timely manner, and to address any requests for additional information by the deadline specified. I understand that submittal of this request form is not a guarantee that expedited review will be granted.

Will Adams

10-31-2023

Signature of Primary Air Permit Contact

Date



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Construction Permit Application
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SECTION 1 - FACILITY IDENTIFICATION

SC Air Permit Number (8-digits only) <i>(Leave blank if one has never been assigned)</i> - 2060-0665	Application Date November 1, 2023
Facility Name/Legal Identity <i>(This should be the official legal name under which the facility is owned/operated and should be consistent with the name registered with the S.C. Secretary of State's office, as applicable.)</i> River Bend Aggregates, LLC	
Facility Site Name (Optional) <i>(Please provide any alternative or additional identifier of the facility, such as a specific plant identifier (e.g., Columbia plant) or any applicable "doing business as" (DBA) identity. This name will be listed on the permit and used to identify the facility at the physical address listed below.)</i>	
Facility Federal Tax Identification Number <i>(Established by the U.S. Internal Revenue Service to identify a business entity)</i> 92-3009411	

REQUEST TYPE (Check all that apply)

Exemption Request:
Complete Section 1 and attach documentation to support exemption request.

Construction Application:
 Minor New Source Review Project
 Synthetic Minor Project
 Prevention of Significant Deterioration Project
 112(g) Project

Expedited Review Request:
If checked, include Expedited Form D-2212 in the construction application package.

Construction Permit Modification:
Provide the construction permit ID (e.g. CA, CB, etc.) for which modification is requested:

Application Revision:

CONSTRUCTION PERMIT APPLICATION FORMS BEING REVISED

(Amended construction permit forms must be filled out completely and attached to this modification request.)

Form #	Date of Original Submittal	Brief Description of Revision

FACILITY PHYSICAL ADDRESS

Physical Address: Hammet Grove Rd (no physical street address has been assigned yet but will be forthcoming)		County: Spartanburg
City: Spartanburg	State: SC	Zip Code: 29307



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Construction Permit Application
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FACILITY PHYSICAL ADDRESS	
Facility Coordinates <i>(Facility coordinates should be based at the front door or main entrance of the facility)</i>	
Latitude: 34°56'10.421"	Longitude: 81°45'45.893"

FACILITY'S PRODUCTS / SERVICES	
Primary Products / Services <i>(List the primary product and/or service)</i>	
Aggregate Mining and Processing	
Primary <u>SIC Code</u> <i>(Standard Industrial Classification Codes)</i> 1442	Primary <u>NAICS Code</u> <i>(North American Industry Classification System)</i> 212321
Other Products / Services <i>(List other products and/or services)</i>	
Other SIC Code(s):	Other NAICS Code(s):

PROJECT DESCRIPTION
Project Description (What, why, how, etc.): River Bend Aggregates, LLC proposes to locate an aggregate mining and processing facility in Spartanburg County. The facility will include a quarry, primary crushing, secondary, tertiary cone crushers, screens, conveyors, and onsite storage.

AIR PERMIT FACILITY CONTACT			
<i>(Person listed will be in our files as the point of contact for all air permitting related questions and will receive all air permitting notifications.)</i>			
Title/Position: Project Manager	Salutation: Mr.	First Name: Ross	Last Name: Birkner
Mailing Address: 1855 E. Main St., Suite 14, 142			
City: Spartanburg	State: SC	Zip Code: 29307	
E-mail Address: rbirkner@turnkeyprocessing.com	Primary Phone No.: 779-230-0349	Alternate Phone No.:	

The signed permit will be e-mailed to the designated Air Permit Contact. If additional individuals need copies of the permit, please provide their names and e-mail addresses.	
Name	E-mail Address

CONFIDENTIAL INFORMATION / DATA
Is <u>confidential information</u> or data being submitted under separate cover? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes*

If yes, submit **ONLY ONE COMPLETE CONFIDENTIAL APPLICATION, with original signature, along with the public version of the application.*

CO-LOCATION DETERMINATION
Are there other facilities in close proximity that could be considered collocated? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes*
If yes, list potential collocated facilities, including air permit numbers if applicable:

**If yes, please submit collocation applicability determination details in an attachment to this application.*



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EQUIPMENT / PROCESS INFORMATION					
Equipment ID/ Process ID	Action	Equipment / Process Description	Maximum Design Capacity (Units)	Control Device ID(s)	Emission Point ID(s)
CR101	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Primary Jaw Crusher	410 Tons Per Hour (TPH)	Wet Suppression (WS)	CR101
CR102	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Secondary Cone Crusher	561 TPH	WS	CR102
CR103	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Tertiary Cone Crusher	275 TPH	WS	CR103
VGf101	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Vibrating Grizzly Feeder	550 TPH	WS	VGf101
SCR101	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Horizontal Screen	550 TPH	WS	SCR101
SCR102	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Horizontal Screen	214 TPH	WS	SCR102
SCR103	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Horizontal Screen	214 TPH	WS	SCR103
SCR104	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Horizontal Screen	379 TPH	WS	SCR104
C101 through C144	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Conveyors	See Emissions Tables	WS	C101 through C143



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Haul Roads	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Haul Roads	NA	WS	Fugitive
Aggregate Stockpiles (STP-1 through STP-8)	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Aggregate Stockpiles	NA	WS	Fugitive
WP101	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	100 HP Fresh Water Supply Pump	100 HP	N/A	WP101
SP101	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	60 HP Slurry Pump	60 HP	N/A	SP101

CONTROL DEVICE INFORMATION

Inherent, required and voluntary control devices, as used in the table below, are defined as:

Inherent: Consult EPA Guidance "[Criteria for Determining Whether Equipment is Air Pollution Control Equipment or Process Equipment.](#)" When a control device is deemed "Inherent", a detailed explanation of the determination must be included as an attachment.

Required: Control device is relied-upon or required by regulation, and controlled emissions are used to show compliance with applicable standards and regulations.

Voluntary: Control device is not relied-upon and uncontrolled emissions are used to show compliance with applicable standards and regulations.



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CONTROL DEVICE INFORMATION								
Control Device ID	Action	Control Device Description	Maximum Design Capacity (Units)	Inherent/ Required/ Voluntary	Pollutants Controlled (Include CAS #)	Capture Efficiency	Destruction/ Removal Efficiency	Emission Point ID(s)
WS	<input checked="" type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing	Wet Suppression		Voluntary	PM			CR101- CR103; SCR101- SCR104; C101- C144, Haul Roads, Aggregate Stockpiles
	<input type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing							
	<input type="checkbox"/> Add <input type="checkbox"/> Remove <input type="checkbox"/> Modify <input type="checkbox"/> Existing							



SECTION 3 - SOURCE IDENTIFICATION AND EMISSIONS CHECKLIST INSTRUCTIONS

Definitions for completing the information in the tables below:

Uncontrolled emissions: Maximum emission rate at full design capacity without consideration of control devices or emission limitations.

Controlled emissions: Maximum emission rate at full design capacity taking into consideration control devices. Controlled emissions only apply if there are associated control equipment and should be based on uncontrolled emissions and capture/control efficiencies. Controlled emissions do not take into consideration emission limitations.

Potential to Emit (PTE): The maximum capacity of a source to emit a regulated pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a regulated pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions as defined in S.C. Regulation 61-62.1, Section I(81), do not count in determining the potential to emit of a source.

Check Box for information addressed	Required Information
Source identification and emissions:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Name of each source, process, and control device.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Assign each source an Equipment ID. The IDs must match the IDs listed in Section 2 of this application.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Assign an Emission Point ID for each source.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Assign a Control Device ID for each control device.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> List each pollutant the source will emit.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> List the Uncontrolled, Controlled, and PTE emissions for each source or equipment in lb/hr and tons/year.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Emission rates for each pollutant should be totaled and listed in lb/hr and tons/year.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Provide the CAS# for each Hazardous Air Pollutant (HAP) and/or Toxic Air Pollutant (TAP).
Information to support emission rates:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Sample calculations.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Emission factors. Include the source, revision date, specific table and/or chapters. Include source test data if factors were derived from source testing.
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Explanation of assumptions, bottlenecks, etc.
<input type="checkbox"/>	<ul style="list-style-type: none"> Source test information: A copy of the source test results may be requested. If the test results are not included in the application, the application should cite whether this was a DHEC approved test, and if not, explain where the test was conducted and other identifying information.



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Check Box for information addressed	Required Information
<input type="checkbox"/>	<ul style="list-style-type: none"> Manufacturer's data.
<input type="checkbox"/>	<ul style="list-style-type: none"> Vendor guarantees that support control device efficiencies.
x	<ul style="list-style-type: none"> New Source Review (NSR) analysis.
<input type="checkbox"/>	<ul style="list-style-type: none"> Other (e.g. example particle size analysis)

Existing (Permitted) Facilities		
Check Box	Required Information	Location in Application
x	Facility-wide emissions prior to construction/modification: <ul style="list-style-type: none"> Include an explanation if these emissions do not match the facility-wide emissions submitted in the last application. 	Section 3.0, Appendix B
x	Facility-wide emissions after construction/modification: <ul style="list-style-type: none"> Include net change, if applicable. 	Appendix B
As applicable for the construction/ modification:		
x	<ul style="list-style-type: none"> Name of each source. 	Appendix B
x	<ul style="list-style-type: none"> Assign each source an Equipment ID. The IDs must match the IDs listed in Section 2 of this application or on your current construction / operating permit. 	Appendix B
x	<ul style="list-style-type: none"> Assign a Control Device ID for each control device. 	Appendix B
x	<ul style="list-style-type: none"> Assign an Emission Point ID for each source. 	Appendix B
x	<ul style="list-style-type: none"> List each pollutant the source will emit. 	Appendix B
x	<ul style="list-style-type: none"> List the Uncontrolled, Controlled, and PTE (if applicable) emissions for each source or equipment. 	Appendix B
x	<ul style="list-style-type: none"> Emission rates for each pollutant should be totaled and listed in lb/hr and tons/year. 	Appendix B
x	<ul style="list-style-type: none"> Provide the CAS# for each HAP and/or TAP. 	N/A
Information to support facility-wide emission rates:		
x	<ul style="list-style-type: none"> Sample calculations. 	Appendix B
x	<ul style="list-style-type: none"> Emission factors. Include the source, revision date, specific table and/or chapters. Include source test data if factors were derived from source testing. 	Appendix B
x	<ul style="list-style-type: none"> Explanation of assumptions, bottlenecks, etc. 	Appendix B
<input type="checkbox"/>	<ul style="list-style-type: none"> Source test information: A copy of source the test results may be requested. If the results are not included in the application, the application should cite whether this was a DHEC approved test and if not, explain where the test was conducted and other identifying information. 	N/A
<input type="checkbox"/>	<ul style="list-style-type: none"> Manufacturer's data. 	N/A



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Existing (Permitted) Facilities		
Check Box	Required Information	Location in Application
<input type="checkbox"/>	<ul style="list-style-type: none">• Vendor guarantees that support control device efficiencies.	N/A
<input checked="" type="checkbox"/>	<ul style="list-style-type: none">• NSR analysis.	Appendix B
<input type="checkbox"/>	<ul style="list-style-type: none">• Other (please explain)	N/A



Section 4 Completeness Checklist for Regulatory Review

State and Federal Air Pollution Control Regulations and Standards

Perform a review of all State and Federal Air Pollution Control Regulations and Standards for applicability and attach a detailed narrative from the regulatory review to the permit application. If the standard or regulation is not applicable, state the reason. Check all regulations and standards that have been reviewed and addressed in the narrative.

Check Box	State and Federal Air Pollution Control Regulations and Standards
<input checked="" type="checkbox"/>	S.C. Regulation 61-62.1 Section II.E Synthetic Minor Construction Permits
<input type="checkbox"/>	S.C. Regulation 61-62.5 Air Pollution Control Standards
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 1 Emissions from Fuel Combustion
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 2 Ambient Air Quality
<input type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 3 Waste Combustion and Reduction (state only)
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 4 Emissions from Process Industries <i>(Note: If Section VIII of this Standard applies, include the process weight rate (PWR) in ton per hour for each applicable source or process.)</i>
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 5 Volatile Organic Compounds
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 5.2 Nitrogen Oxides Lowest Achievable Emission Rate
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 7 Prevention of Significant Deterioration (PSD)
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 7.1 Nonattainment New Source Review (NSR)
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Standard No. 8 Toxic Air Pollutants (TAPs) (state only)
<input checked="" type="checkbox"/>	S.C. Regulation 61-62.6 Control of Fugitive Particulate Matter
<input checked="" type="checkbox"/>	S.C. Regulation 61-62.60 and 40 CFR Part 60 New Source Performance Standards (NSPS)
<input type="checkbox"/>	S.C. Regulation 61-62.61 and 40 CFR Part 61 National Emission Standards for Hazardous Air Pollutants (NESHAP)
<input checked="" type="checkbox"/>	S.C. Regulation 61-62.63 and 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories
<input checked="" type="checkbox"/>	40 CFR Part 64 Compliance Assurance Monitoring (CAM)
<input type="checkbox"/>	S.C. Regulation 61-62.68 and 40 CFR Part 68 Chemical Accident Prevention Provisions
<input checked="" type="checkbox"/>	S.C. Regulation 61-62.70 and 40 CFR Part 70 Title V Operating Program
<input checked="" type="checkbox"/>	Other S.C. Air Pollution Control Regulations, as applicable.
<input type="checkbox"/>	Other Federal Air Pollution Control Regulations, as applicable.
<input type="checkbox"/>	40 CFR 98 Green House Gas (GHG) emissions <i>(Note: Quantify GHG emissions, if S.C. Regulation 61-62.5, Standard No. 7 or S.C. Regulation 61-62.5, Standard No. 7.1 is triggered.)</i>



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Completeness Checklist:

For applicable federal and state regulations, the narrative should address the specific limitations, monitoring, recordkeeping, and reporting requirements associated with the new or altered source(s). Include the specific regulatory citations. Check all that have been reviewed and addressed in the narrative.

Check Box	Completeness Checklist:
Applicability Determination:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Is this regulation <i>applicable, reasonably applicable, potentially applicable, or not applicable</i>?
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Is the basis for the applicability determination explained?
Affected Sources:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Is the name and identification of each emission source or process included?
Compliance Demonstration:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> How will compliance be demonstrated?
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Are specific methods or activities to be utilized by the facility to demonstrate compliance with each specific limitation and/or requirement provided?
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Are control devices and control device requirements included?
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Are monitoring, recordkeeping, and reporting requirements necessary to demonstrate compliance included?
Regulatory Citations:	
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> Are the regulatory citations identified?



**Bureau of Air Quality
Emission Point Information
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A. APPLICATION IDENTIFICATION	
1. Facility Name: River Bend Aggregates, LLC	
2. SC Air Permit Number (if known; 8-digits only): -	3. Application Date: November 1, 2023
4. Project Description: Proposed Aggregate Mining and Processing Plant	
5. Are other facilities collocated for air compliance? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. If Yes, provide permit numbers of collocated facilities:

B. AIR CONTACT		
Consulting Firm Name (if applicable): S&ME, Inc.		
Title/Position: Senior Air Quality Scientist	Salutation: Mr.	First Name: Marty
Mailing Address: 48 Brookfield Oaks Dr., Suite F		
City: Greenville	State: SC	Zip Code: 29607
E-mail Address: mjones@smeinc.com	Phone No.: 864-297-9944	864-630-2956

C. EMISSION POINT DISPERSION PARAMETERS		
<ul style="list-style-type: none"> • Source data requirements are based on the appropriate source classification. • Each emission point is classified as a point, flare, area, area circular, area polygon, volume, open pit, line, or buoyant line source. • Contact the Bureau of Air Quality for clarification of data requirements. • Include sources on a scaled site map. Also, a picture of area or volume sources would be helpful but is not required. • A user generated document or spreadsheet may be substituted in lieu of this form provided all of the required emission point parameters are submitted in the same order, units, etc. as presented in these tables. 		
<u>Abbreviations / Units of Measure:</u>		
<ul style="list-style-type: none"> • AGL = Above Ground Level • BTU/hr = British Thermal Unit per hour • ° = Degrees 	<ul style="list-style-type: none"> • °F = Degrees Fahrenheit • ft = feet • ft/s = feet per second 	<ul style="list-style-type: none"> • K = Kelvin • m = meters • UTM = Universal Transverse Mercator



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Emission Point Information
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Reminder: For all Emission Points, list the unique Emission Point ID for that source. Use the same emission point ID as shown in the current permit and provided in the last modeling submittal (as applicable). If the emission point ID has been changed from what was previously submitted, please list the current emission point ID with the old emission point ID in parenthesis

D. POINT SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Exit Temp. (°F)	Exit Velocity (ft/s)	Inside Diameter (ft)	Discharge Orientation	Rain Cap? (Y/N)	Distance To Nearest Property Boundary (ft)	Building		
		Easting (m)	Northing (m)								Height (ft)	Length (ft)	Width (ft)

E. FLARE SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Heat Release Rate (BTU/hr)	Exit Velocity (ft/s)	Exit Temp. (°F)	Heat Loss Fraction	Distance To Nearest Property Boundary (ft)	Building			
		Easting (m)	Northing (m)							Height (ft)	Length (ft)	Width (ft)	

F. AREA SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Angle From North (°)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						
CR101	Primary Jaw Crusher	430174	3865872	9.8	16.0	8.7	See AERMOD files	See AERMOD files	1,400
CR102	Secondary Cone Crusher	430159	3865987	9.8	10.0	20.0	See AERMOD files	See AERMOD files	1,100



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Emission Point Information
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F. AREA SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Angle From North (°)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						
CR103	Tertiary Cone Crusher	430165	3865984	9.8	10.0	20.0	See AERMOD files	See AERMOD files	1,200
VGF101	Vibrating Grizzly Feeder	430168	3865868	9.8	4.3	24.0	See AERMOD files	See AERMOD files	1,400
SCR101	Screen	430163	3865910	6.6	8.0	20.0	See AERMOD files	See AERMOD files	1,300
SCR102	Screen	430162	3865942	6.6	8.0	20.0	See AERMOD files	See AERMOD files	1,200
SCR103	Screen	430157	3865923	6.6	8.0	20.0	See AERMOD files	See AERMOD files	1,300
SCR104	Screen	430238	3865994	6.6	8.0	20.0	See AERMOD files	See AERMOD files	950
C101	Conveyor	430173	3865875	6.6	2.5	80.1	See AERMOD files	See AERMOD files	850 - 1500
C102	Conveyor	430185	3865890	6.6	2.5	80.1	See AERMOD files	See AERMOD files	850 - 1500
C103	Conveyor	430176	3865903	6.6	3.0	125.0	See AERMOD files	See AERMOD files	850 - 1500
C104	Conveyor	430155	3865909	6.6	3.0	80.0	See AERMOD files	See AERMOD files	850 - 1500
C105	Conveyor	430150	3865903	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C106	Conveyor	430157	3865914	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C107	Conveyor	430144	3865910	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C108	Conveyor	430153	3865921	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C109	Conveyor	430144	3865948	6.6	3.5	120.0	See AERMOD files	See AERMOD files	850 - 1500
C110	Conveyor	430154	3865980	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500



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F. AREA SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Angle From North (°)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						
C111	Conveyor	430167	3865978	6.6	3.5	40.0	See AERMOD files	See AERMOD files	850 - 1500
C112	Conveyor	430174	3865973	6.6	3.5	120.0	See AERMOD files	See AERMOD files	850 - 1500
C113	Conveyor	430173	3865952	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C114	Conveyor	430177	3865949	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500
C115	Conveyor	430168	3865946	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C116	Conveyor	430174	3865944	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500
C117	Conveyor	430170	3865933	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C118	Conveyor	430158	3865941	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500
C119	Conveyor	430150	3865955	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C120	Conveyor	430153	3865971	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C121	Conveyor	430153	3865927	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C122	Conveyor	430161	3865925	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C123	Conveyor	430168	3865910	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C124	Conveyor	430173	3865910	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C125	Conveyor	430194	3865909	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C126	Conveyor	430207	3865899	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500



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F. AREA SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Angle From North (°)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						
C127	Conveyor	430179	3865943	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C128	Conveyor	430179	3865935	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C129	Conveyor	430191	3865940	6.6	2.5	80.1	See AERMOD files	See AERMOD files	850 - 1500
C130	Conveyor	430178	3865927	6.6	2.5	80.1	See AERMOD files	See AERMOD files	850 - 1500
C131	Conveyor	430205	3865950	6.6	3.0	125.0	See AERMOD files	See AERMOD files	850 - 1500
C132	Conveyor	430229	3865979	6.6	3.0	80.0	See AERMOD files	See AERMOD files	850 - 1500
C133	Conveyor	430251	3866009	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C134	Conveyor	430261	3866021	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C135	Conveyor	430235	3866002	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C136	Conveyor	430223	3866006	6.6	3.5	75.0	See AERMOD files	See AERMOD files	850 - 1500
C137	Conveyor	430247	3865979	6.6	3.5	120.0	See AERMOD files	See AERMOD files	850 - 1500
C138	Conveyor	430259	3865970	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500
C139	Conveyor	430239	3866001	6.6	3.5	40.0	See AERMOD files	See AERMOD files	850 - 1500
C140	Conveyor	430234	3866009	6.6	3.5	120.0	See AERMOD files	See AERMOD files	850 - 1500
C141	Conveyor	430224	3865959	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C142	Conveyor	430177	3865880	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500



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F. AREA SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Angle From North (°)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						
C143	Conveyor	430177	3865879	6.6	3.5	60.0	See AERMOD files	See AERMOD files	850 - 1500
C144	Conveyor	430178	3865879	6.6	3.5	100.0	See AERMOD files	See AERMOD files	850 - 1500
STP1	Aggregate Stockpile	430131	3865908	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP2	Aggregate Stockpile	430137	3865886	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP3	Aggregate Stockpile	430226	3865884	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP4	Aggregate Stockpile	430235	3865949	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP5	Aggregate Stockpile	430277	3865957	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP6	Aggregate Stockpile	430274	3866035	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP7	Aggregate Stockpile	430228	3866034	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
STP8	Aggregate Stockpile	430198	3866003	25.0	60.0	60.0	See AERMOD files	See AERMOD files	850 - 1500
Haul Roads	Haul Roads						See AERMOD files	See AERMOD files	Variable

G. AREA CIRCULAR SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Radius of Area (ft)	Number of Vertices	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)					



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H. AREA POLYGON SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Initial Vertical Dimension (ft)	Number of Vertices	Area (ft ²)	Distance To Nearest Property Boundary (ft)
		Easting-1 (m)	Northing-1 (m)					

I. VOLUME SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Physical Horizontal Dimension (ft)	Initial Horizontal Dimension σ_y (ft)	Physical Vertical Dimension (ft)	Initial Vertical Dimension σ_z (ft)	Distance To Nearest Property Boundary (ft)
		Easting (m)	Northing (m)						

J. OPEN PIT SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)		Release Height AGL (ft)	Easterly Length (ft)	Northerly Length (ft)	Pit Volume (ft ³)	Angle From North (°)
		Easting (m)	Northing (m)					

K. LINE SOURCE

Emission Point ID	Description/Name	UTM Coordinates (NAD83)				Release Height AGL (ft)	Line Length (ft)	Line Width (ft)	Initial Vertical Dimension σ_z (ft)
		Start Easting (m)	Start Northing (m)	End Easting (m)	End Northing (m)				



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L. BUOYANT LINE SOURCE (must complete Line Source and Buoyant Line Source tables)

Emission Point ID	Description/Name	Average Building Length (ft)	Average Building Height (ft)	Average Building Width (ft)	Average Line Source Width (ft)	Average Building Separation (ft)	Average Buoyancy Parameter (m ⁴ /s ³)

M. EMISSION RATES

Emission Point ID	Pollutant Name	CAS #	Emission Rate (lb/hr)	Same as Permitted? ⁽¹⁾	Controlled or Uncontrolled	Averaging Period
CR101	PM10		0.22	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
CR101	PM2.5		0.04	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
CR102	PM10		0.30	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
CR102	PM2.5		0.06	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
CR103	PM10		0.15	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
CR103	PM2.5		0.03	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
VGF101	PM10		0.009	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
VGF101	PM2.5		0.0011	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR101	PM10		0.41	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR101	PM2.5		0.03	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR102	PM10		0.16	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR102	PM2.5		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR103	PM10		0.16	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR103	PM2.5		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR104	PM10		0.28	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
SCR104	PM2.5		0.02	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C101	PM10		0.025	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C101	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C102	PM10		0.025	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C102	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr



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M. EMISSION RATES

Emission Point ID	Pollutant Name	CAS #	Emission Rate (lb/hr)	Same as Permitted? ⁽¹⁾	Controlled or Uncontrolled	Averaging Period
C103	PM10		0.025	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C103	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C104	PM10		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C104	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C105	PM10		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C105	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C106	PM10		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C106	PM2.5		0.003	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C107	PM10		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C107	PM2.5		0.003	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C108	PM10		0.026	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C108	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C109	PM10		0.026	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C109	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C110	PM10		0.026	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C110	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C111	PM10		0.04	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C111	PM2.5		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C112	PM10		0.04	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C112	PM2.5		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C113	PM10		0.019	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C113	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C114	PM10		0.019	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C114	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C115	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C115	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C116	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr



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M. EMISSION RATES

Emission Point ID	Pollutant Name	CAS #	Emission Rate (lb/hr)	Same as Permitted? ⁽¹⁾	Controlled or Uncontrolled	Averaging Period
C116	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C117	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C117	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C118	PM10		0.013	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C118	PM2.5		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C119	PM10		0.013	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C119	PM2.5		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C120	PM10		0.013	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C120	PM2.5		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C121	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C121	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C122	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C122	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C123	PM10		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C123	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C124	PM10		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C124	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C125	PM10		0.022	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C125	PM2.5		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C126	PM10		0.022	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C126	PM2.5		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C127	PM10		0.012	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C127	PM2.5		0.003	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C128	PM10		0.017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C128	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C129	PM10		0.017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C129	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr



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M. EMISSION RATES

Emission Point ID	Pollutant Name	CAS #	Emission Rate (lb/hr)	Same as Permitted? ⁽¹⁾	Controlled or Uncontrolled	Averaging Period
C130	PM10		0.017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C130	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C131	PM10		0.017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C131	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C132	PM10		0.017	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C132	PM2.5		0.005	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C133	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C133	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C134	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C134	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C135	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C135	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C136	PM10		0.006	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C136	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C137	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C137	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C138	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C138	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C139	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C139	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C140	PM10		0.004	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C140	PM2.5		0.001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C141	PM10		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C141	PM2.5		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C142	PM10		0.023	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C142	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C143	PM10		0.023	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr



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M. EMISSION RATES

Emission Point ID	Pollutant Name	CAS #	Emission Rate (lb/hr)	Same as Permitted? ⁽¹⁾	Controlled or Uncontrolled	Averaging Period
C143	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C144	PM10		0.023	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
C144	PM2.5		0.007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP1	PM10		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP1	PM2.5		0.0001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP2	PM10		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP2	PM2.5		0.0001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP3	PM10		0.01	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP3	PM2.5		0.0012	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP4	PM10		0.002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP4	PM2.5		0.0001	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP5	PM10		0.011	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP5	PM2.5		0.0008	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP6	PM10		0.011	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP6	PM2.5		0.0008	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP7	PM10		0.003	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP7	PM2.5		0.0002	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
STP8	PM10		0.010	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
STP8	PM2.5		0.0007	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Haul Roads	PM10		0.52	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr
Haul Roads	PM2.5		0.052	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Controlled	1-hr

(1) Any difference between the rates used for permitting and the air compliance demonstration must be explained in the application report.

Appendix B – Emission Calculations

Table 1
Facility Wide Emissions
River Bend Aggregates, LLC
Pacolet, South Carolina
October 2023

Parameter		Emissions, tons per year				
		Engines	Aggregate Processing and Material Handling	Stockpiles	Unpaved Roads	Total
PM	Potential Uncontrolled		360	0.44	76.98	437.7
	Potential Controlled		28	0.44	7.70	36.2
PM10	Potential Uncontrolled	1.54	132	0.22	22.72	156.1
	Potential Controlled	1.54	10	0.22	2.27	14.2
PM2.5	Potential Uncontrolled		20.01	0.02	2.27	22.3
	Potential Controlled		1.63	0.02	0.227	1.9
NOx	Potential Uncontrolled	5.61				5.6
CO	Potential Uncontrolled	4.68				4.7
SOx	Potential Uncontrolled	1.44				1.4
Aldehyde	Potential Uncontrolled	0.32				0.3
VOC	Potential Uncontrolled	1.73				1.7

Table 2
Aggregate Processing and Material Handling Emissions
River Bend Aggregate, LLC
Pacolet, South Carolina
October 2023

Equipment ID	Equipment Description	PM						PM10						PM2.5						
		Uncontrolled		Potential		Actual		Uncontrolled		Potential		Actual		Uncontrolled		Potential		Actual		
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	
C101	Cracker	412	2.21	9.70	0.49	2.15	2.36	6.49	0.51	2.21	2.36	0.97	3.48	0.15	0.55	0.64	0.18	0.13	0.64	0.64
C102	Cracker	131	0.72	3.00	0.15	0.62	1.73	0.48	1.73	1.73	0.65	2.36	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C103	Cracker	275	1.53	6.26	0.33	1.45	4.04	0.34	1.24	1.24	0.45	1.63	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C104	Cracker	556	3.12	12.52	0.66	2.91	8.08	0.63	2.21	2.21	0.80	2.91	0.30	1.10	1.10	0.39	0.43	1.10	1.10	
C105	Cracker	147	0.82	3.31	0.17	0.68	1.91	0.48	1.73	1.73	0.65	2.36	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C106	Cracker	147	0.82	3.31	0.17	0.68	1.91	0.48	1.73	1.73	0.65	2.36	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C107	Cracker	213	1.21	4.84	0.25	1.03	2.87	0.73	2.61	2.61	0.93	3.31	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C108	Cracker	501	2.81	11.24	0.60	2.36	6.66	0.50	1.81	1.81	0.65	2.36	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C109	Cracker	521	2.91	11.63	0.62	2.41	6.86	0.51	1.86	1.86	0.66	2.41	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C110	Cracker	546	3.01	11.92	0.63	2.46	7.06	0.52	1.91	1.91	0.67	2.46	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C111	Cracker	885	5.01	19.24	1.03	3.91	11.12	0.82	3.01	3.01	1.07	3.91	0.30	1.10	1.10	0.39	0.43	1.10	1.10	
C112	Cracker	835	4.71	18.44	0.98	3.71	10.52	0.79	2.81	2.81	0.97	3.71	0.30	1.10	1.10	0.39	0.43	1.10	1.10	
C113	Cracker	418	2.31	9.09	0.48	1.73	4.91	0.66	2.21	2.21	0.78	2.81	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C114	Cracker	418	2.31	9.09	0.48	1.73	4.91	0.66	2.21	2.21	0.78	2.81	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C115	Cracker	127	0.71	2.81	0.14	0.51	1.41	0.36	1.31	1.31	0.48	1.73	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C116	Cracker	127	0.71	2.81	0.14	0.51	1.41	0.36	1.31	1.31	0.48	1.73	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C117	Cracker	127	0.71	2.81	0.14	0.51	1.41	0.36	1.31	1.31	0.48	1.73	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C118	Cracker	127	0.71	2.81	0.14	0.51	1.41	0.36	1.31	1.31	0.48	1.73	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C119	Cracker	275	1.53	6.26	0.33	1.24	3.48	0.34	1.24	1.24	0.45	1.63	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C120	Cracker	275	1.53	6.26	0.33	1.24	3.48	0.34	1.24	1.24	0.45	1.63	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C121	Cracker	90	0.51	1.91	0.10	0.36	1.01	0.26	0.91	0.91	0.33	1.24	0.10	0.36	0.36	0.10	0.10	0.36	0.36	
C122	Cracker	90	0.51	1.91	0.10	0.36	1.01	0.26	0.91	0.91	0.33	1.24	0.10	0.36	0.36	0.10	0.10	0.36	0.36	
C123	Cracker	110	0.61	2.21	0.12	0.46	1.26	0.33	1.16	1.16	0.41	1.46	0.12	0.46	0.46	0.12	0.12	0.46	0.46	
C124	Cracker	110	0.61	2.21	0.12	0.46	1.26	0.33	1.16	1.16	0.41	1.46	0.12	0.46	0.46	0.12	0.12	0.46	0.46	
C125	Cracker	489	2.71	10.14	0.51	1.81	5.09	0.37	1.31	1.31	0.45	1.63	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C126	Cracker	489	2.71	10.14	0.51	1.81	5.09	0.37	1.31	1.31	0.45	1.63	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C127	Cracker	254	1.41	5.31	0.26	0.96	2.71	0.79	2.81	2.81	0.97	3.51	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C128	Cracker	379	2.11	7.91	0.41	1.46	4.04	1.18	4.04	4.04	1.41	5.09	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C129	Cracker	379	2.11	7.91	0.41	1.46	4.04	1.18	4.04	4.04	1.41	5.09	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C130	Cracker	379	2.11	7.91	0.41	1.46	4.04	1.18	4.04	4.04	1.41	5.09	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C131	Cracker	379	2.11	7.91	0.41	1.46	4.04	1.18	4.04	4.04	1.41	5.09	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C132	Cracker	379	2.11	7.91	0.41	1.46	4.04	1.18	4.04	4.04	1.41	5.09	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C133	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C134	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C135	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C136	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C137	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C138	Cracker	121	0.66	2.41	0.13	0.46	1.26	0.34	1.26	1.26	0.41	1.46	0.13	0.46	0.46	0.13	0.13	0.46	0.46	
C139	Cracker	88	0.46	1.66	0.08	0.29	0.80	0.22	0.80	0.80	0.28	1.01	0.08	0.29	0.29	0.08	0.08	0.29	0.29	
C140	Cracker	88	0.46	1.66	0.08	0.29	0.80	0.22	0.80	0.80	0.28	1.01	0.08	0.29	0.29	0.08	0.08	0.29	0.29	
C141	Cracker	147	0.82	3.01	0.17	0.68	1.91	0.48	1.73	1.73	0.65	2.36	0.15	0.55	0.64	0.18	0.13	0.64	0.64	
C142	Cracker	500	2.81	11.24	0.60	2.36	6.66	0.50	1.81	1.81	0.65	2.36	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C143	Cracker	500	2.81	11.24	0.60	2.36	6.66	0.50	1.81	1.81	0.65	2.36	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C144	Cracker	500	2.81	11.24	0.60	2.36	6.66	0.50	1.81	1.81	0.65	2.36	0.20	0.73	0.73	0.25	0.25	0.73	0.73	
C145	Cracker	806	4.51	16.63	0.86	3.16	8.91	0.66	2.41	2.41	0.82	3.01	0.30	1.10	1.10	0.39	0.43	1.10	1.10	
C146	Cracker	806	4.51	16.63	0.86	3.16	8.91	0.66	2.41	2.41	0.82	3.01	0.30	1.10	1.10	0.39	0.43	1.10	1.10	
Total			82.27	306.32	6.41	24.67	65.56	4.41	16.04	115.98	2.31	8.12	30.04	3.15	11.31	43.77	10.31	37.17	47.51	

Equipment ID	Equipment Description	PM	PM10	PM2.5
C101	Cracker	0.0018	0.0018	0.0018
C102	Cracker	0.0005	0.0005	0.0005
C103	Cracker	0.0011	0.0011	0.0011
C104	Cracker	0.0022	0.0022	0.0022
C105	Cracker	0.0044	0.0044	0.0044
C106	Cracker	0.0044	0.0044	0.0044
C107	Cracker	0.0066	0.0066	0.0066
C108	Cracker	0.0132	0.0132	0.0132
C109	Cracker	0.0132	0.0132	0.0132
C110	Cracker	0.0164	0.0164	0.0164
C111	Cracker	0.0220	0.0220	0.0220
C112	Cracker	0.0220	0.0220	0.0220
C113	Cracker	0.0090	0.0090	0.0090
C114	Cracker	0.0090	0.0090	0.0090
C115	Cracker	0.0022	0.0022	0.0022
C116	Cracker	0.0022	0.0022	0.0022
C117	Cracker	0.0022	0.0022	0.0022
C118	Cracker	0.0022	0.0022	0.0022
C119	Cracker	0.0055	0.0055	0.0055
C120	Cracker	0.0055	0.0055	0.0055
C121	Cracker	0.0018	0.0018	0.0018
C122	Cracker	0.0018	0.0018	0.0018
C123	Cracker	0.0022	0.0022	0.0022
C124	Cracker	0.0022	0.0022	0.0022
C125	Cracker	0.0090	0.0090	0.0090
C126	Cracker	0.0090	0.0090	0.0090
C127	Cracker	0.0033	0.0033	0.0033
C128	Cracker	0.0044	0.0044	0.0044
C129	Cracker	0.0044	0.0044	0.0044
C130	Cracker	0.0044	0.0044	0.0044
C131	Cracker	0.0044	0.0044	0.0044
C132	Cracker	0.0044	0.0044	0.0044
C133	Cracker	0.0015	0.0015	0.0015
C134	Cracker	0.0015	0.0015	0.0015
C135	Cracker	0.0015	0.0015	0.0015
C136	Cracker	0.0015	0.0015	0.0015
C137				

Table 3
Diesel Engine Emissions
River Bend Aggregates, LLC
Pacolet, South Carolina
October 2023

WP101 - 100 HP Water Supply Pump - Tier 3

Pollutant	Engine Capacity	Emission Factor		Emissions				
	hp	lb/hr-hp ¹	g/kW-hr ²	lb/hr	Potential		Actual	
					lb/yr	ton/yr	lb/yr	ton/yr
NOx	100	---	4.7	0.77	6,745	3.37	1,602	0.80
CO	100	6.68E-03	---	0.67	5,852	2.93	1,389	0.69
SOx	100	2.05E-03	---	0.21	1,796	0.90	426	0.21
PM10	100	2.20E-03	---	0.22	1,927	0.96	458	0.23
CO2	100	1.15	---	115	1,007,400	504	239,200	120
Aldehyde	100	4.63E-04	---	0.05	406	0.20	96	0.048
TOC	100	2.47E-03	---	0.25	2164	1.08	514	0.26

SP101 - 60 HP Dewatering Pump - Tier 3

Pollutant	Engine Capacity	Emission Factor		Emissions				
	hp	lb/hr-hp ¹	g/kW-hr ²	lb/hr	Potential		Actual	
					lb/yr	ton/yr	lb/yr	ton/yr
NOx	60	---	4.7	0.51	4,468	2.23	1,061	0.530
CO	60	6.68E-03	---	0.40	3,511	1.76	834	0.417
SOx	60	2.05E-03	---	0.12	1,077	0.54	256	0.128
PM10	60	2.20E-03	---	0.13	1,156	0.58	275	0.137
CO2	60	1.15	---	69	604,440	302	143,520	72
Aldehyde	60	4.63E-04	---	0.03	243	0.12	58	0.029
TOC	60	2.47E-03	---	0.15	1,298	0.65	308	0.154

Total, tpy	Potential	Actual
NOx	5.61	1.33
CO	4.68	1.11
SOx	1.44	0.34
PM10	1.54	0.37
Aldehyde	0.32	0.08
TOC	1.73	0.41

Notes:

- 1) lb/hp-hr emission factors are from AP-42 Table 3.3-1
 - 2) g/kW-hr emission factors are from EPA Nonroad CI Engines: Exhaust Emission Standards
- Actual Emissions - Based on Permitted 5hr/day and 5day/wk (1300 hr/yr) (permit Condition 6.B.1)
Maximum Emissions = 8760 hr/yr

Table 4
 Stockpile Emissions
 River Bend Aggregates, LLC
 Pacolet, South Carolina
 October 2023

Emission Point ID	Emissions Point Description	Contents	Pile Size (acres)	Emission Factor ¹		Hourly Emissions			Annual Emissions		
				(lbs PM ₁₀ /day/acre)	(lbs PM ₁₀ /day/acre)	(lbs PM ₁₀ /hr)	(lbs PM ₁₀ /hr)	(lbs PM _{2.5} /hr)	(tons PM ₁₀ /yr)	(tons PM _{2.5} /yr)	
STP1	Storage Pile No. 1	Riprap	0.06	1.4	0.7	0.0034	0.0017	0.0001	0.015	0.007	0.00
STP2	Storage Pile No. 2	1" x 1/2"	0.06	1.4	0.7	0.0034	0.0017	0.0001	0.015	0.007	0.00
STP3	Storage Pile No. 3	GAB	0.35	1.4	0.7	0.0197	0.0099	0.0007	0.086	0.043	0.00
STP4	Storage Pile No. 4	Unknown	0.06	1.4	0.7	0.0034	0.0017	0.0001	0.015	0.007	0.00
STP5	Storage Pile No. 5	Man. Sand	0.40	1.4	0.7	0.0275	0.0113	0.0008	0.099	0.049	0.00
STP6	Storage Pile No. 6	Unknown	0.40	1.4	0.7	0.0275	0.0113	0.0008	0.099	0.049	0.00
STP7	Storage Pile No. 7	GAB	0.10	1.4	0.7	0.0056	0.0028	0.0002	0.025	0.012	0.00
STP8	Storage Pile No. 8	#78	0.36	1.4	0.7	0.0203	0.0101	0.0007	0.089	0.044	0.00
Total						0.101	0.050	0.004	0.44	0.22	0.02

Notes:

1) Equation obtained from EPA Control of Open Fugitive Dust Sources, 1988:

$$E = 1.76(V_{50})^{0.365} p / 235(H)^{1.15}$$

E = emissions in pound per day per acre

V₅₀ = silt content, % = 1.6

p = number of days with > 0.01 in. of precipitation = 102

H = percentage of time unobstructed wind speed exceeds 12 mph at the mean pile height = 10

(mean value from AP 42, table table 13.2.4.1) (NOAA weather data for nearest weather station)

Estimated

2) Stockpile area based on Concept Overview Drawing

Riprap 0.06

1" x 1/2" 0.06

GAB 0.35

Unknown 0.06

Man. Sand 0.4

Unknown 0.4

GAB 0.1

#78 0.36

Table 5
Haul Roads Emissions
River Bend Aggregates, LLC
Pacolet, South Carolina
October 2023

Emission Source ID	Pollutants	Particle Size Multiplier k (lb/VMT)	Surface Material Silt Loading Content (%)	Avg. Vehicle Weight W (tons)	Emission Factor E (lb/VMT) ¹	VMT/yr	Uncontrolled (tons/yr)	Uncontrolled (lbs/hour)	Wet Suppression Control Efficiency (%)	Controlled (tons/yr)	Controlled (lbs/hr)
Haul Roads	PM	4.9	10	64	12.32	12,500	76.98	17.58	90	7.698	1.758
	PM10	1.5	10.0	64	3.64	12,500	22.72	5.19	90	2.272	0.519
	PM2.5	0.15	10.0	64	0.36	12,500	2.27	0.52	90	0.227	0.052

Notes:

1) Equation obtained from AP-42, Section 13.2.2

$$E = k(s/12)^a (W/3)^b [(365-P)/365]$$

E - emissions - pounds

per vehicle mile

traveled

k - empirical constant

a - empirical constant

b - empirical constant

s - surface material silt cc

W - mean vehicle weight

P - number of days with

≥ 0.01 in. of

precipitation =

PM=particulate matter, yr=year

PM10

1.5

0.7

0.45

10

64

102

(NOAA weather data for nearest weather station)

PM

4.9

0.15

0.9

0.45

10

64

102

PM2.5

0.15

0.9

0.45

10

64

102

**Appendix C – Air Dispersion Modeling Results and Modeling
Output Files**

**Table 6
Emission Sources Modeling Analysis
River Bend Aggregates
Pacolet, SC**

Source	Description	PM10 Emissions (Controlled)		PM2.5 Emissions (Controlled)		NOx Emissions		CO Emissions	
		lb/hr	g/sec	lb/hr	g/sec	lb/hr	g/sec	lb/hr	g/sec
Area Sources									
CR101 Jaw crusher	Jaw Crusher	0.221	0.028	0.0410	0.0052				
CR102 Crusher	Secondary Cone Crusher	0.303	0.038	0.0561	0.0071				
CR103 Tertiary Cone Crusher	Tertiary Cone Crusher	0.149	0.019	0.0275	0.0035				
VGF101	Vibrating Grizzly Feeder	0.0088	0.0011	0.0011	0.0001				
SCR101	Screener	0.407	0.051	0.0275	0.0035				
SCR102	Screener	0.158	0.020	0.0107	0.0013				
SCR103	Screener	0.158	0.020	0.0107	0.0013				
SCR104	Screener	0.280	0.035	0.0190	0.0024				
C101	Conveyor	0.025	0.003	0.007	0.0009				
C102	Conveyor	0.025	0.003	0.007	0.0009				
C103	Conveyor	0.025	0.003	0.007	0.0009				
C104	Conveyor	0.007	0.001	0.002	0.0002				
C105	Conveyor	0.007	0.001	0.002	0.0002				
C106	Conveyor	0.010	0.001	0.003	0.0003				
C107	Conveyor	0.010	0.001	0.003	0.0003				
C108	Conveyor	0.026	0.003	0.007	0.0009				
C109	Conveyor	0.026	0.003	0.007	0.0009				
C110	Conveyor	0.026	0.003	0.007	0.0009				
C111	Conveyor	0.038	0.005	0.011	0.0014				
C112	Conveyor	0.038	0.005	0.011	0.0014				
C113	Conveyor	0.019	0.002	0.005	0.0007				
C114	Conveyor	0.019	0.002	0.005	0.0007				
C115	Conveyor	0.006	0.001	0.002	0.0002				
C116	Conveyor	0.006	0.001	0.002	0.0002				
C117	Conveyor	0.006	0.001	0.002	0.0002				
C118	Conveyor	0.013	0.002	0.004	0.0005				
C119	Conveyor	0.013	0.002	0.004	0.0005				
C120	Conveyor	0.013	0.002	0.004	0.0005				
C121	Conveyor	0.004	0.001	0.001	0.0001				
C122	Conveyor	0.004	0.001	0.001	0.0001				
C123	Conveyor	0.005	0.001	0.001	0.0002				
C124	Conveyor	0.005	0.001	0.001	0.0002				
C125	Conveyor	0.022	0.003	0.006	0.0008				
C126	Conveyor	0.022	0.003	0.006	0.0008				
C127	Conveyor	0.012	0.001	0.003	0.0004				
C128	Conveyor	0.017	0.002	0.005	0.0006				
C129	Conveyor	0.017	0.002	0.005	0.0006				
C130	Conveyor	0.017	0.002	0.005	0.0006				
C131	Conveyor	0.017	0.002	0.005	0.0006				
C132	Conveyor	0.017	0.002	0.005	0.0006				
C133	Conveyor	0.006	0.001	0.002	0.0002				
C134	Conveyor	0.006	0.001	0.002	0.0002				
C135	Conveyor	0.006	0.001	0.002	0.0002				
C136	Conveyor	0.006	0.001	0.002	0.0002				
C137	Conveyor	0.004	0.001	0.001	0.0001				
C138	Conveyor	0.004	0.001	0.001	0.0001				
C139	Conveyor	0.004	0.001	0.001	0.0001				
C140	Conveyor	0.004	0.001	0.001	0.0001				
C141	Conveyor	0.007	0.001	0.002	0.0002				
C142	Conveyor	0.023	0.003	0.007	0.0008				
C143	Conveyor	0.023	0.003	0.007	0.0008				
C144	Conveyor	0.023	0.003	0.007	0.0008				
Stockpile 1	Stockpile	0.002	0.0002	0.0001	0.00002				
Stockpile 2	Stockpile	0.002	0.0002	0.0001	0.00002				
Stockpile 3	Stockpile	0.010	0.0012	0.0007	0.0001				
Stockpile 4	Stockpile	0.002	0.0002	0.0001	0.0000				
Stockpile 5	Stockpile	0.011	0.0014	0.0008	0.0001				
Stockpile 6	Stockpile	0.011	0.0014	0.0008	0.0001				
Stockpile 7	Stockpile	0.003	0.0004	0.0002	0.00003				
Stockpile 8	Stockpile	0.010	0.0013	0.0007	0.0001				
UNPAVED	Unpaved Roads	0.519	0.0650	0.0519	0.0065				
Point Sources									
ENG100HP	100 HP engine					0.77	0.0970	0.67	0.0970
ENG60HP	60 HP engine					0.51	0.0643	0.4008	0.0643
	Total (lbs/hr)	2.89		0.43		1.28		1.07	
	Total (tons/year)	12.65		1.88		5.61		4.68	
	Std. No. 2 de minimis (tons/year)	5.0		5.0		5.0		10.0	
	Modeling Required?	Yes		No ⁽¹⁾		No ⁽²⁾		No	

⁽¹⁾ Modeling is not required however PM2.5 modeling was performed anyway to demonstrate compliance with the NAAQS.

⁽²⁾ Modeling is not required for the two diesel engines since the NOx emissions from each engine is less than 5 tons/year.

**Table 7
Emission Source Release Parameters
River Bend Aggregates
Pacolet, SC**

Source	Description	UTM Coordinates		Elevation Meters	Release Ht meters	XINIT (Easterly) meters	YINIT (Northerly) meters
		X	Y				
Area Sources							
CR101 Jaw crusher	Jaw Crusher	430173.58	3865872.14	192.99	3.0	4.9	2.65
CR102 Crusher	Secondary Cone Crusher	430159.31	3865986.61	196.55	3.0	3.05	6.1
CR103 Tertiary Cone Crusher	Tertiary Cone Crusher	430164.93	3865983.72	196.56	3.0	3.05	6.1
VGF101	Vibrating Grizzly Feeder	430168.15	3865868.09	191.55	3.0	1.31	7.32
SCR101	Screeners	430162.95	3865910.48	192.63	2.0	2.44	6.1
SCR102	Screeners	430162.31	3865942.39	194.85	2.0	2.44	6.1
SCR103	Screeners	430157.24	3865922.60	191.19	2.0	2.44	6.1
SCR104	Screeners	430238.17	3865994.48	201.06	2.0	2.44	6.1
C101	Conveyor	430173.15	3865874.79	192.88	2.0	0.76	24.4
C102	Conveyor	430184.55	3865889.60	196.75	2.0	0.76	24.4
C103	Conveyor	430175.91	3865902.69	195.32	2.0	0.91	38.1
C104	Conveyor	430154.93	3865908.78	192.14	2.0	0.91	24.38
C105	Conveyor	430150.14	3865902.66	190.66	2.0	1.07	18.29
C106	Conveyor	430156.78	3865913.97	192.43	2.0	1.07	18.29
C107	Conveyor	430143.64	3865909.52	189.59	2.0	1.07	22.86
C108	Conveyor	430152.92	3865921.00	190.80	2.0	1.07	22.86
C109	Conveyor	430143.59	3865947.92	194.46	2.0	1.07	36.58
C110	Conveyor	430154.27	3865979.72	196.02	2.0	1.07	30.49
C111	Conveyor	430166.63	3865978.42	196.52	2.0	1.07	12.19
C112	Conveyor	430173.95	3865973.12	196.86	2.0	1.07	36.58
C113	Conveyor	430172.65	3865951.58	195.79	2.0	1.07	18.29
C114	Conveyor	430177.00	3865948.52	195.45	2.0	1.07	30.49
C115	Conveyor	430167.77	3865945.81	194.92	2.0	1.07	18.29
C116	Conveyor	430173.99	3865944.33	194.99	2.0	1.07	30.49
C117	Conveyor	430169.77	3865933.44	192.91	2.0	1.07	18.29
C118	Conveyor	430158.18	3865940.78	194.51	2.0	1.07	30.49
C119	Conveyor	430149.59	3865954.82	194.74	2.0	1.07	22.87
C120	Conveyor	430152.79	3865970.65	195.59	2.0	1.07	22.87
C121	Conveyor	430153.00	3865927.30	191.30	2.0	1.07	22.87
C122	Conveyor	430161.34	3865924.54	191.71	2.0	1.07	22.87
C123	Conveyor	430167.97	3865909.51	193.08	2.0	1.07	22.87
C124	Conveyor	430173.14	3865909.73	194.28	2.0	1.07	22.87
C125	Conveyor	430193.64	3865909.38	198.46	2.0	1.07	22.87
C126	Conveyor	430206.72	3865898.93	198.87	2.0	1.07	22.87
C127	Conveyor	430179.37	3865943.23	194.98	2.0	1.07	22.87
C128	Conveyor	430179.37	3865934.86	193.64	2.0	1.07	22.87
C129	Conveyor	430190.98	3865940.20	196.61	2.0	0.76	24.4
C130	Conveyor	430177.82	3865927.40	194.56	2.0	0.76	24.4
C131	Conveyor	430204.65	3865949.53	197.95	2.0	0.91	38.1
C132	Conveyor	430228.62	3865979.42	200.50	2.0	0.91	24.38
C133	Conveyor	430251.48	3866008.64	201.17	2.0	1.07	18.29
C134	Conveyor	430261.23	3866021.31	200.62	2.0	1.07	18.29
C135	Conveyor	430234.56	3866001.90	200.77	2.0	1.07	22.86
C136	Conveyor	430223.16	3866006.13	200.21	2.0	1.07	22.86
C137	Conveyor	430247.21	3865978.79	200.69	2.0	1.07	36.58
C138	Conveyor	430258.60	3865969.83	199.76	2.0	1.07	30.49
C139	Conveyor	430239.14	3866001.20	200.96	2.0	1.07	12.19
C140	Conveyor	430233.79	3866009.37	200.61	2.0	1.07	36.58
C141	Conveyor	430224.08	3865959.01	199.41	2.0	1.07	18.29
C142	Conveyor	430177.07	3865879.59	193.99	2.0	1.07	30.49
C143	Conveyor	430177.28	3865879.33	194.05	2.0	1.07	18.29
C144	Conveyor	430177.70	3865879.00	194.17	2.0	1.07	30.49
Stockpile 1	Stockpile	430130.82	3865907.93	192.39	7.62	18.29	18.29
Stockpile 2	Stockpile	430137.04	3865886.28	191.15	7.62	18.29	18.29
Stockpile 3	Stockpile	430225.71	3865884.16	196.12	7.62	18.29	18.29
Stockpile 4	Stockpile	430235.39	3865949.49	199.35	7.62	18.29	18.29
Stockpile 5	Stockpile	430276.50	3865956.69	197.24	7.62	18.29	18.29
Stockpile 6	Stockpile	430274.29	3866035.14	199.93	7.62	18.29	18.29
Stockpile 7	Stockpile	430228.04	3866034.09	199.32	7.62	18.29	18.29
Stockpile 8	Stockpile	430198.29	3866002.63	198.40	7.62	18.29	18.29
Unpaved Roads	Unpaved Roads	The Riverbend Quarry will maintain a fugitive dust control plan to minimize fugitive emissions; therefore, this source is exempt from modeling per Section 2.2.2 of the SCDHEC Air Modeling Guidelines.					
Point Sources							
ENG60HP	60 HP engine	Per Section 2.2.3 of the SCDHEC Air Modeling Guidelines, modeling is not required for this engine since the NOx emissions are less than 5 tons/year.					
ENG100HP	100 HP engine	Per Section 2.2.3 of the SCDHEC Air Modeling Guidelines, modeling is not required for this engine since the NOx emissions are less than 5 tons/year.					

Table 8
Building Parameters
River Bend Aggregates
Pacolet, SC

Building Parameters		
Scale House	Feet	Meters
Building Height	10	3.05
Minimum Building Dimension	12	3.66
Maximum Building Dimension	20	6.10
Shop		
Building Height	60	18.29
Minimum Building Dimension	70	21.34
Maximum Building Dimension	115	35.06

Table 9
Maximum Modelled Concentrations
River Bend Aggregates
Pacolet, SC

Pollutant/Year	Unit	All Sources			
		1 hr	8-hr	24-hr	Annual
PM10 Concentration - 24 hr (6th high) - 2015 to 2019 (5-year concatenated)	(ug/m3)			66.98	
PM2.5 Concentration - 24 hr (8th high) - 2015 to 2019 (5-year concatenated)	(ug/m3)			7.00	
PM2.5 Concentration - Annual (1st high) - 2015 to 2019 (5-year concatenated)	(ug/m3)				1.91

**Table 10
 Representative Background Concentrations
 River Bend Aggregates
 Pacolet, SC**

Pollutant	Site Name	County	City	Background Value (ug/m ³) ⁽¹⁾	Averaging Period	Dominant Source	Measurement Scale	Monitor Objective
PM2.5	T.K. Gregg	Spartanburg	Spartanburg	7.7	Annual	Area	Neighborhood	Population Exposure
				15.4	24-hour			
PM10	Greenville ESC	Greenville	Greenville	30.0	24-hour	Area	Neighborhood	Population Exposure
NOx	Greenville ESC	Greenville	Greenville	14.8	Annual	Area	Neighborhood	Population Exposure
				75.3	1-hr 98th percentile			

Note:

1) Background values obtained from South Carolina Department of Health and Environmental Control (SCDHEC) Bureau of Air Quality (BAQ) website per 03-30-2021 Background Data Modeling spreadsheet.

Table 11
Compliance with National Ambient Air Quality Standards
River Bend Aggregates
Pacolet, SC

Pollutant	Averaging Time	Modelled Concentration (ug/m³)	Background Concentration (ug/m³)⁽¹⁾	Total Concentration (ug/m³)	NAAQS (ug/m³)	Compliance with Standard 2 Demonstrated?⁽²⁾
PM2.5	Annual	1.91	7.7	9.6	12	Yes
	24-hr	7.00	15.4	22.4	35	Yes
PM10	24-hr	66.98	30.0	97.0	150	Yes

⁽¹⁾ Background concentrations provided from SCDHEC Background Data for Modeling Purposes, March 30, 2021.

⁽²⁾ Compliance with Standard No. 2 requires that the maximum modeled concentration added to the background not exceed the NAAQS.