MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT

DOCKET #06-22

COMPANY: Excalibur Site Services, LLC

LOCATION: 5301 Andard Street, Baltimore, MD 21226

APPLICATION: Installation of two (2) crushing and screening plants, each rated at 300 tons per hour, and each equipped with up to three diesel engines, processing waste asphalt pavement, waste concrete, brick, block, and other building demolition materials.

ITEM	DESCRIPTION
1	Notice of Application and Informational Meeting
2	Permit to Construct Application Forms – Forms 5, 5A, 5B, and 44 for each plant, emissions calculations, and diagrams.
3	Zoning Approval from Baltimore City

MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION

NOTICE OF APPLICATION AND INFORMATIONAL MEETING

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Excalibur Site Services, LLC on February 15, 2022 for the installation of two (2) crushing and screening plants, each rated at 300 tons per hour, and each equipped with up to three diesel engines, processing waste asphalt pavement, waste concrete, brick, block, and other building demolition materials. The proposed installation will be located at 5301 Andard Street, Baltimore, MD 21226.

An Informational Meeting will be held on February 13, 2023 at 6:00 PM at the Curtis Bay Recreational Center located at 1630 Filbert St., Baltimore, MD 21226.

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Informational Meeting has been scheduled so that citizens can discuss the application and the permit review process with the applicant and the Department.

The application and other supporting documents are available for public inspection on the Department's website. Look for Docket #06-22 at the following link:

https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx

The Department will provide an interpreter for deaf and hearing impaired persons provided that a request is made for such service at least ten (10) days prior to the meeting.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

Christoppher R. Hoagland, Director
Air and Radiation Administration

PERMIT TO CONSTRUCT APPLICATION
FOR
CRUSHING & SCREENING PLANT
WITH A
JAW CRUSHER & SCREENER

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ■ Baltimore, Maryland 21230
(410) 537-3230 ■ 1-800-633-6101 ■ www.mde.state.md.us

Air and Radiation Management Administration ■ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☒ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

EXCALIBUR SITE SERVICES, LLC.

Mailing Address

1500 ASPEN STREET
Street Address

BALTIMORE | MD | 21226
City | State | Zip

Telephone Number 410.360.7645

Signature

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

CLARENCE L. CLAYTOR, OWNER
Print Name and Title | Date

1B. Equipment Location and Telephone Number (if different from above)

5301 ANDARD ST.
Street Number and Street Name

BALTIMORE | MD | 21226
City/Town | State | Zip | Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status (15)	New Construction Begin (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
A	0322	0322	

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**

One Crushing & Screening Plant equipped with: One (1) 300 ton per hour JAW Crusher, powered by a diesel-fired Tier 3 engine rated at 350 brake horsepower; one (1) 480 ton per hour Screener, powered by a diesel-fired Tier 3 engine rated at 350 brake horsepower; and one (1) Radial Stacker, powered by a diesel-fired Tier 3 engine rated at 150 brakehorsepower.

5. Workmen's Compensation Coverage WCV6177419 (Binder/Policy Number) 6-Nov-2022 (Expiration Date)

Company ACCIDENT FUND GENERAL

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 6

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name _____ Title _____

Company _____

Mailing Address/Street _____

City/Town _____ State _____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

RECYCLING CENTER FOR WASTE ASPHALT PAVEMENT MATERIALS, WASTE CONCRETE, BLOCK, & BRICK MATERIALS, BUILDING DEMOLITION MATERIALS, ETC.

9. Control Devices Associated with this Equipment

NONE [ ] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other [X] 24-9 Describe **WATER SUPPRESSION**

10. Annual Fuel Consumption for this Equipment

D = Diesel oil

OIL - 1000 GALLONS	SULFUR %	GRADE	NATURAL GAS - 1000 FT^3	LP GAS - 100 GALLONS	GRADE
150	15 PPM	D			
26-31	32-33	34	35-41	42-45	

COAL - TONS	SULFUR %	ASH %	WOOD - TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ (Specify Type) [ ] 66-1 ANNUAL AMOUNT CONSUMED _____ (Specify Units)

OTHER FUELS _____ (Specify Type) [ ] 66-2 ANNUAL AMOUNT CONSUMED _____ (Specify Units)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE (for this equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per year
X				12	6	312
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent
X				
76	77-78	79-80	81-82	83-84

(Total Seasons= 100%)

12. Equivalent Stack Information- is Exhaust through Doors, Window, etc. Only? (Y/N) **Y** 85

If not, then

Height Above Ground (FT)	Inside Diameter at Top	Exit Temperature (^{O}F)	Exit Velocity (FT/SEC)
86-88	89-91	92-95	96-98

NOTE:

Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)

Is any of this data to be considered confidential? (Y or N)

INPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. WASTE ASPHALT PAVEMENT		180	TONS	600,000	TONS
2. MATERIALS, WASTE CONCRETE,					
3. BLOCK, & BRICK MATERIALS,					
4. BUILDING DEMOLITION MATERIALS,					
5. ETC.					
6.					
7.					
8.					
9.					
TOTAL		180	TONS	600,000	TONS

14. Output Materials (for this equipment)

Process/Product Stream

OUTPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. CRUSHED ASPHALT PAVEMENT		180	TONS	600,000	TONS
2. MATERIALS, CONCRETE, BLOCK, &					
3. BRICK MATERIALS, BUILDING					
4. MATERIALS, ETC.					
5.					
6.					
7.					
8.					
9.					
TOTAL		180	TONS	600,000	TONS

15. Waste Streams - Solid and Liquid

OUTPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
0	0.11	33
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compunds	PM-10
42	10	3
117-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compunds	PM-10
		5
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
	4	4	4	4	2,4
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local **Date Rec'd. State** **Return to Local Jurisdiction**

Date _____ By _____

Reviewed by Local Jurisdiction **Reviewed by State**

Date _____ By _____ Date _____ By _____

19. Inventory Date **Month/Year** **Equipment Code** **SCC Code**

171-174 175-177 178-185

20.

Annual Operating Rate	Maximum Design Hourly Rate	Permit to Operate Month	Transaction Date (MM/DD/YR)
188-192	193-199	200-201	202-207

Staff Code	VOC Code	SIP Code	Regulation Code	Confidentiality
208-210	211 212	213 214	215-218	219

Point Description

220-238

Action

239

A: Add
C: Change

MARYLAND DEPARMENT OF THE ENVIRONMENT
1800 Washington Blvd ● Baltimore, Maryland 21230
(410) 537-3230 ● 1-800-633-6101 ● www.mde.state.md.us

Air and Radiation Management Administration ● Air Quality Permits Program

Summary of Demonstrations for Meeting the Ambient Impact Requirement (26.11.15.05) and the T-Bact Requirement (26.11.15.06)

DO NOT WRITE IN THIS SPACE

Company Name EXCALIBUR SITE SERVICES, LLC.

1. Summary of T-BACT Demonstration: List all emission reduction options considered in determining T-BACT starting with the option that reduces the emissions the most. Supporting documentation must be

Emission Reduction Option	% Emission Reduction	COSTS Capital	COSTS Annual Operating
1. WATER SPRAY	90%		
2.			
3.			
4.			
5.			

2. Identify the emission reduction option selected as T-BACT and briefly explain why this is the best selectic Supporting documentation must be attached.

3. List screening levels and highest estimated off-site concentrations (ug/m3) resulting from **premises-wide allowable emissions** (1) of each Toxic Air Pollutant that is covered by the regulations and discharged from the installation or source applying for the permit. See the General Instructions for more detail. Supporting documentation **must** be attached.

	Toxic Air Pollutant	CAS Number	SCREENING LEVEL(S) 1-HR	8-HR	Annual	OFF-SITE CONCENTRATIONS 1-HR	8-HR	Annual
1	CRYSTALLINE SILICA	14808-60-7	The estimated emission rate of 0.0006 lb/hr, is less than the COMAR 26.11.15.06 threshold of 0.003 lb/hour, so the plant is in compliance and mathematical modeling is not necessary.					
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

☐ If unable to use a Screening Analysis, check the box, and attach the Second Tier Analysis or Special Permit request to this form.

(1) **Premises** is defined as: "all the installations or other sources that are located on contiguous or adjacent properties and that are under the control of one person or under common control of a group of persons" (COMAR 26.11.15.01B (12)).

Allowable Emissions are defined as: "the maximum emissions a source or installation is capable of discharging after consideration of any physical or operational limitations required by this subtitle or by the enforceable conditions included in an applicable air quality permit to construct, permit to operate, secretarial order, plan for compliance, consent agreement, or court order" (COMAR 26.11.15.01B (2)).

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Emissions Data

Fill out one Form 5B for each stack or other emission point subject to the regulations (see the General Instructions for more detail).

DO NOT WRITE IN THIS SPACE

Company Name EXCALIBUR SITE SERVICES, LLC.

1. Number Identifying this Emission Point on Required Plot Plan _____
   (If applicable, list company's internal I.D. _____)

2. Brief description of Emission Point, Associated Equipment and Control Devices
   MATERIAL TRANSFER POINTS, CRUSHER, and SCREENER FUGITIVE EMISSIONS, ENGINE EMISSIONS

3. Emission Schedule (for this stack or emission point)

Continuous	Intermittent	Minutes/Hour	Hours/Day	Days/Week	Weeks/Year
X		60	12	6	52

Seasonal Variation: None X Winter % ____ Spring % ____ Summer% ____ Fall% ____

4. Stack Information

Height above ground (ft)	Inside Diameter at top of round stack (ft)	Exit Temperature (oF)
N/A	N/A	N/A
Height above structures (ft)	**Dimensions at top of rectangular stack (ft)**	**Exit Velocity (ft/min)**
N/A		N/A
Distance to Nearest Property Line (ft)		**Gas Volume (acfm)**
		N/A

Dimensions of Building Stack is on (ft): Height ____ Length ____ Width ____

5. Control Devices Associated with this Stack or Emission Point

Control Device	Number	Control Device	Number
0. None		7. Elec. Precipitator	
1. Simple Cyclone		8. Baghouse	
2. Multiple Cyclone		9. Thermal Afterburner	
3. Spray Tower		10. Catalytic Afterburner	
4. Absorption Tower		11. Other (specify)	
5. Venturi Scrubber			
6. Carbon Adsorber			

6. Criteria Pollutant Emissions (attach supporting documentation)

Criteria Pollutants	ESTIMATED EMISSIONS Design Capacity (lb/hr)	Projected (lb/hr)	Operations (1) (ton/year)
$PM_{2.5}$	0.26	0.26	0.40
PM_{10}	0.21	0.21	0.40
Oxides of Sulfur	0.01	0.01	0.02
Oxides of Nitrogen	2.76	2.76	5.16
Carbon Monoxide	3.47	3.47	6.50
VOC (total)	0.80	0.80	1.51
Lead			

7. Toxic Air Pollutant Emissions (attach supporting documentation)

		ESTIMATED EMISSIONS Design Capacity	Projected Operations (1)		Used for Form 5A, Part 3 (2)	
Toxic Air Pollutant (list all)	CAS Number	(lb/hr)	(lb/hour)	(ton/year)	(lb/hour)	(ton/year)
1. CRYSTALLINE SILICA	14808-60-7	5.13 E-04	5.13 E-04	9.60 E-04	5.13 E-04	9.60 E-04
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

(1) Based on the emission schedule reported in Block three of this form.

(2) This column must be filled in with the emission estimates used to demonstrate compliance with the regulations. If continuous emissions at design capacity allow you to demonstrate compliance with all air regulations, then these emissions should be listed here. If the air toxic regulations or any other regulations require you to discharge less than continuously at design capacity, then these emissions should be listed here.

PREMISES-WIDE EMISSIONS ESTIMATE

HOURLY PREMISES-WIDE EMISSIONS ESTIMATE: POUNDS (lbs/hour)

	C&S	Engines	C&S	Engines	Engines					
	PM_{10}		$PM_{2.5}$		CO	NO_X*	HC	SO_2	CO_2	Crystalline Silica
JAW	0.24	0.21	0.07	0.21	3.47	2.76	0.80	0.01	403	5.13 E-4
IMPACT	0.34	0.21	0.05	0.21	3.47	2.76	0.80	0.01	403	5.13 E-4
TOTAL	**0.57**	**0.21**	**0.13**	**0.21**	**3.47**	**2.76**	**0.80**	**0.01**	**403**	**5.13 E-4**

COMAR 26.11.15.06 threshold for Crystalline Silica is: 0.003 lb/hour

DAILY PREMISES-WIDE EMISSIONS ESTIMATE: POUNDS (lbs/day)

	C&S	Engines	C&S	Engines	Engines				
	PM_{10}		$PM_{2.5}$		CO	NO_X*	HC	SO_2	CO_2
JAW	2.84	2.54	0.89	2.54	41.69	33.08	9.65	0.10	4,830
IMPACT	4.06	2.54	0.62	2.54	41.69	33.08	9.65	0.10	4,830
TOTAL	**6.90**	**5.08**	**1.51**	**5.08**	**83.39**	**66.2**	**19.30**	**0.20**	**9,660**

ANNUAL PREMISES-WIDE EMISSIONS ESTIMATE: TONS (tons/year)

	C&S	Engines	C&S	Engines	Engines				
	PM_{10}		$PM_{2.5}$		CO	NO_X*	HC	SO_2	CO_2
JAW	0.44	0.40	0.14	0.40	6.50	5.16	1.51	0.02	753
IMPACT	0.31	0.40	0.05	0.40	6.50	5.16	1.51	0.02	753
TOTAL	**0.75**	**0.79**	**0.19**	**0.79**	**13.01**	**10.3**	**3.01**	**0.03**	**1,507**

EMISSION CALCULATIONS FOR: *EXCALIBUR SITE SERVICES, LLC.*
BALTIMORE, MD 21226

AT STEADY STATE CONDITIONS	Feed Materials	
Recycle Loop:	0%	processed through the Impact Crusher
Screener Processes:	100%	processed through Screener
Screener Built-in under-conveyor:	55%	transferred to Underconveyor, which discharges to Stacker
Stacking Conveyor:	55%	transferred to Stacker
Dropped to Built-in Discharge Conveyors:	100%	of feed materials
Dropped to Stockpiles:	100%	of feed materials

PRODUCTION BASIS: FEED MATERIALS TRANSFERRED BY EXCAVATOR TO FEED HOPPER OF JAW CRUSHER

ACTIVITY DESCRIPTION	Drops	Transfers	Crusher	Screener
Jaw Crusher receives, processes & discharges materials			100%	
Screener receives from Crusher & processes materials				100%
Screener discharges materials to three conveyors		100%		
Conveyor 1 is an under-conveyor which discharges to Conveyor 2		55%		
Conveyor 2 discharges to a Stacker Conveyor		55%		
Conveyor 3 discharges to a Stockpile				
Conveyor 4 discharges to a Stockpile	100%			
Stacker Conveyor discharges to a Stockpile				
	1.00	2.10	1.00	1.00

EMISSIONS ESTIMATE

The fugitive emissions from the Crushing and Screening plant are generated from 4 different types of emission points:

Emission Factor Units: lb/ton of materials processed	PM10	PM2.5	Quantity	PM10	PM2.5
Material Drops (material handling activities)*	4.60E-05	1.45E-05	1.00	4.60E-05	1.45E-05
Material transfers to conveyors**	4.60E-05	1.40E-05	2.10	9.66E-05	2.94E-05
Crusher emissions (includes feed and discharge emissions)	2.45E-04	7.70E-05	1.00	2.45E-04	7.70E-05
Screener emissions (includes feed emissions only)	7.40E-04	5.00E-05	1.00	7.40E-04	5.00E-05

AP-42, Section 11.19, provides emission factors for specific, defined activities only. It does not provide emission factors for general material handling. Therefore, an emission factor from WEBFIRE was used to estimate emissions for general material handling. AP-42's Primary Crushing emission factor is for TPM only, so following the footnote C recommendation in Table 11.19.2-2, the emission factor was adjusted for particle size using particle size multipliers from Section 13.2.4. AP-42 provides a PM-10 emission factor only for Conveyor Transfers, so the same particle size multipliers were used to estimate emission factors for PM2.5 for conveyor transfers.

* Excavator to Feed Hopper, Discharge to Stockpile.
**Conveyor transfers: Screener discharges to as many as four (4) built-in Conveyors (100% of original feed materials).

Based on these assumptions, the emission point quantity listed above was determined.

Maximum Hourly Production Rate: *300* *tons of Materials processed*

Permit Limit for Production:	*600,000*	*tons of Materials processed*
Total Annual Hours of Operations:	*3,744*	*hours of production time*
Total Annual Days of Operations:	*312*	*days of production*

ANNUAL EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.38E-02	4.34E-03
Material transfers to conveyors, which are drops to belt conveyors	5.80E-02	1.76E-02
Total Misc. Handling Operations	7.18E-02	2.20E-02
Crusher emissions	7.35E-02	2.31E-02
Screener emissions	2.22E-01	1.50E-02
Total ton/yr for each particle size	**3.67E-01**	**6.01E-02**

*ER = (EF * EmisPtQty) * Tons/YEAR / 2000*

DAILY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.66E-01	5.20E-02
Material transfers to conveyors, which are drops to belt conveyors	3.48E-01	1.06E-01
Total Misc. Handling Operations	5.13E-01	1.58E-01
Crusher emissions	8.82E-01	2.77E-01
Screener emissions	2.66E+00	1.80E-01
Total lb/day for each particle size	**4.06E+00**	**6.15E-01**

*ER = (EF * EmisPtQty) * Tons/day*

HOURLY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.38E-02	4.34E-03
Material transfers to conveyors, which are drops to belt conveyors	2.90E-02	8.82E-03
Total Misc. Handling Operations	4.28E-02	1.32E-02
Crusher emissions	7.35E-02	2.31E-02
Screener emissions	2.22E-01	1.50E-02
Total lb/hr for each particle size	**3.38E-01**	**5.13E-02**

*ER = (EF * EmisPtQty) * DesignRate (Tons/hr)*

CRYSTALLINE SILICA ESTIMATE

3.38E-01	lb/hour, PM10 emissions
15.2%	fraction of PM10 that is respirable
1%	of respirable particulate that is CS
0.00051	lb/hour, Crystalline Silica

Emission Point	SCC	Emission Factor	PT Type	Control method
Primary Crushing		2.45 E-04	PM10	Wet Suppression
		7.70 E-05	PM2.5	

from AP-42 Section 13.2.4 Aggregate Handling and Storage Piles

Particle Size Multipliers (k) are:

< 30 µm	0.74
< 10 µm	0.35
< 2.5 µm	0.11

FROM FIRE

Emission Point	SCC	Emission Factor	PT Type	Control method
Secondary Crushing/Screening	3-05-020-02	7.40E-04 2.33E-04	PM10, primary PM2.5, primary*	Wet Suppression
Misc. Operations: Screen/Conveyor/ Handling	3-05-020-06	4.60E-05 1.45E-05	PM10, primary PM2.5, primary*	Wet Suppression

* this EF was calculated: the Particle Size Multipliers provided in Section 13.2.4 of AP-42 were used to ratio the PM_{10} emission factor to a $PM_{2.5}$ emission factor, as recommended by Footnote C in Table 11.19.2-2

SO2 Emission Factor	
Ultra Low Sulfur Diesel	
15	PPM
2	lb SO2/lb S
6.943	lbs/gal Diesel
0.00020829	lb SO2/gal
94.5	g SO2/MGAL

WEBFIRE

as of September 2016
USEPA CHIEF

Level1 Industrial Processes
Level2 Mineral Products
Level3 Stone Quarrying - Processing (See also 305320)

FACTORID	SCC	SCCID	LEVEL 4	POLLUTANT	CONTROL ID	CONTROL	Primary	FACTOR	UNIT	MEASURE	MATERIAL	ACTION	AP42 SECTION	NOTES	REF_DESC		QUALITY	Created	Dupcount	Dupreason
19598	3-05-020-31	5881	Truck Unloading	PM10, primary	129	UNCONTROLLED		1.60E-05	Lb	Tons	Raw Material	Processed	11.19.2		EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E		0	
19563	3-05-020-02	5862	Secondary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		7.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	0	
19571	3-05-020-03	5863	Tertiary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		5.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	2	Crushing
19572	3-05-020-03	5863	Tertiary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		7.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	2	Screening
19573	3-05-020-03	5863	Tertiary Crushing/Screening	PM2.5, primary	201	WET SUPPRESSION		1.00E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E	8/1/2004	2	Crushing
19574	3-05-020-03	5863	Tertiary Crushing/Screening	PM2.5, primary	201	WET SUPPRESSION		5.00E-05	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E	8/1/2004	2	Screening
19586	3-05-020-06	5866	Miscellaneous Operations: Screen/Convey/Handling	PM10, primary	201	WET SUPPRESSION		4.60E-05	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	D	8/1/2004	0	
			Miscellaneous Operations: Screen/Convey/Handling	PM25, primary[1]				1.30E-05	lb	tons										

[1](found in AP42 Section 11.19.2.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration / Air Quality Permits Program
1800 Washington Boulevard, STE 720 Baltimore, Maryland 21230-1720
(410) 537-3230 • 1-800-633-6101 • www.mde.state.md.us

Mail application to
MDE/ARMA
1800 Washington Blvd, Suite 720
Baltimore, MD 21203-1720

Don't forget to:
✓ *Sign the application*
✓ *Include vendor literature*

Air Quality Permit to Construct & Registration Application for

INTERNAL COMBUSTION ENGINES

(Electrical Power Generators, Power Equipment, Fire Protection Pumps)

1) Applicability

You must check off one of the following items to use this application form

- [ ] Electrical power generation (off grid, base load, peak, load shaving, etc.)
  - Use MDE Form 42 for emergency use only generators
- [X] Power equipment (hydraulic, mechanical, etc.)
- [ ] Fire protection pump

For electrical power generators only, *you must check off one of the following items to use this application form*

- [ ] I have a CPCN Exemption from the Public Service Commission for this generator (contact the Public Service Commission at 410.767.8131)
- [ ] This generatore was installed before October 1, 2001 and I do not need a CPCN Exemption

2) Business/Institution/Facility where the engine will be located [ ] Check if this is a federal facility

Name: EXCALIBUR SITE SERVICES, LLC. Phone: 410.360.7645

Street Address: 5301 ANDARD ST.

City: BALTIMORE State: MD Zip Code: 21226 County: BALTIMORE CITY

3) Owner/Operator of the engine (if different than above)

Name: EXCALIBUR SITE SERVICES, LLC. Phone: _____

Mailing Address: 1500 ASPEN STREET

City: BALTIMORE State: MD Zip Code: 21226

4) Installer [ ] Check if installer is applying for permit. If checked, complete the following:

Name: _____ Phone: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

5) Engine Information

Installation Date	Engine Manufacturer & Model	Horsepower	Manufacture Date	Fuel Type
	CATERPILLAR, C9	350	Tier 3	DIESEL
	CATERPILLAR, C4.4	130	Tier	DIESEL
	KUBOTA, V2203	50	Tier 3	DIESEL

6) Operating Information

Intended use desription: (Examples, "a portable generator at a construction site" or "peak shaving with the emergency generator", etc.)

THE ENGINES ARE USED TO POWER ONE CRUSHER, ONE SCREENER, AND ONE STACKING CONVEYOR, RESPECTIVELY, FOR PURPOSE OF PROCESSING ROAD AND CONSTRUCTION DEBRIS INTO A USABLE SIZE FOR REUSE ELSEWHERE

Hours per day	Hours per year
12	3744

7) Required Attachments

(Check that they are attached)

- [X] Vendor literature
- [ ] CPCN Exemption from the Public Service Commission
  - Electrical generators only
  - Not needed for generators installed before October 1, 2001

8) Workers Compensation (Environmental article §1-202)

Workers insurance policy or binder number: WCV6177419

- [ ] Check if self employed or otherwise exempt from this requirement

" I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

CLARENCE L. CLAYTOR, OWNER

Owners Signature Printed Name and Title Date

LEAVE BLANK, MDE use only

- [ ] Permit
- [ ] Registration (Less than 1,000 brake horsepower & installed prior to 11/24/03)

Permit/Registration Number: _____ - _____ - _____ - _____

AI: _____

	SOx	NOx	CO	VOC	PM	PM-10
Emissons Stack						
Fugitive						

ESTIMATE OF EMISSIONS FOR ENGINES

CRITERIA AIR POLLUTANTS

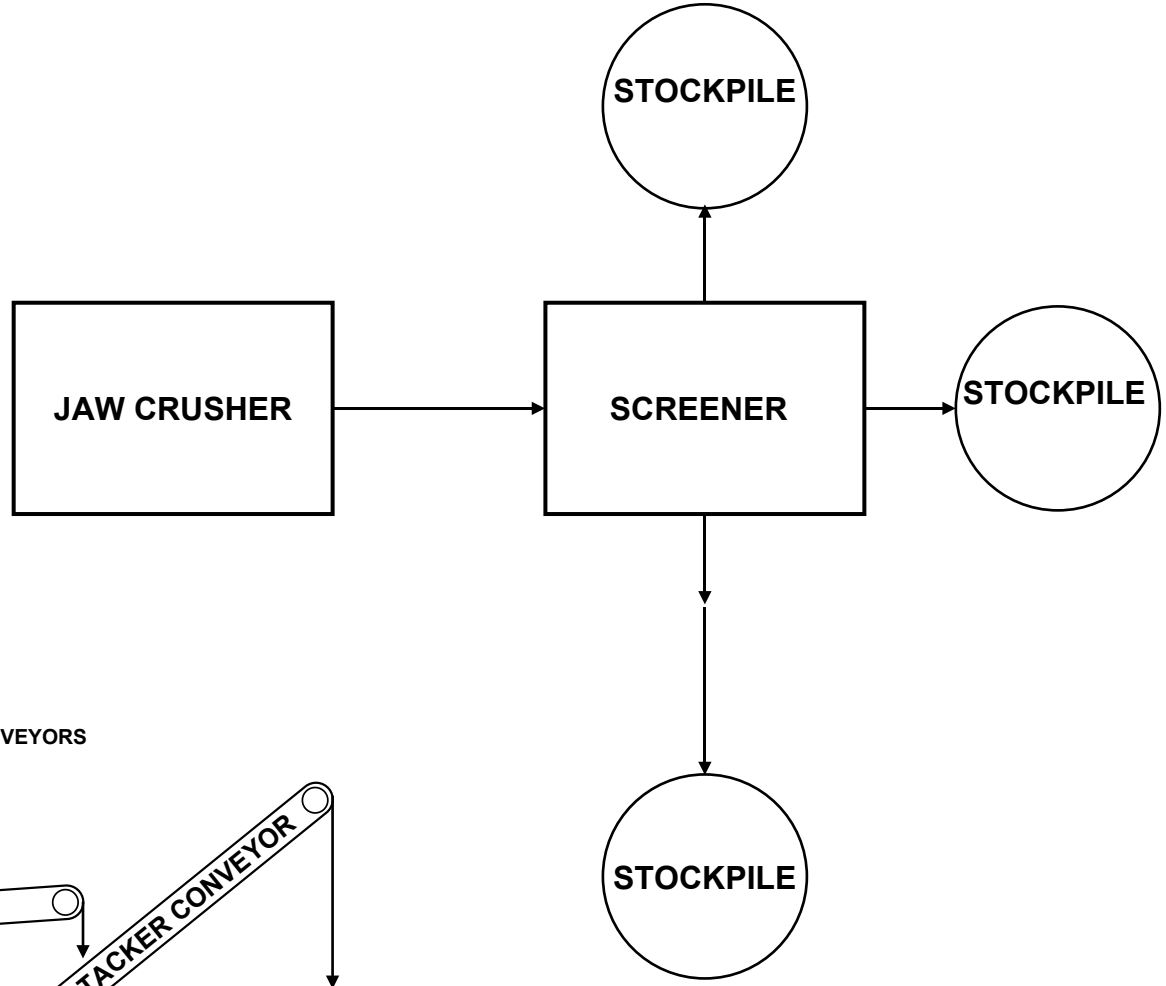
	Engines						
Equipment	**JAW CRUSHER**	**SCREENER**	**STACKER**				
Engine OEM	**CATERPILLAR**						
Engine Size, bHP	**350**	**130**	**50**				
Model #	**C9**	**C4.4**	**V2203**				
Tier Rating	**3**	**3**	**3**				
Fuel Rate (gal/hr)	**25**	**10**	**5**				
Daily Hours	**12**	**12**	**12**	**ESTIMATED EMISSION RATES**			
Annual Hours	**3744**	**3744**	**3744**				
Tier 3 emission factor units→	**g/bhp-hr**	**lb/hp-hr**	**lb/hp-hr**	**grams/hr***	**lb/hr**	**lbs/day**	**tons/year**
PM10	0.15	0.22	0.30	96	0.21	2.5	0.40
PM2.5	0.15	0.22	0.30	96	0.21	2.5	0.40
NOx	2.33	2.31	2.69	1250	2.76	33.1	5.16
TOC (HC, NMHC)	0.67	0.69	0.81	365	0.80	9.6	1.51
CO	2.60	3.70	3.70	1576	3.47	41.7	6.50
AP-42 emission factor units→	**lb / gal**				**lb/hr**	**lbs/day**	**tons/year**
SO_X	0.00021				0.01	0.1	0.02
GREENHOUSE GASES							
AP-42 emission factor units→	**lb/hp-hr**				**lb/hr**	**lbs/day**	**tons/year**
CO_2	1.15				403	4,830	753

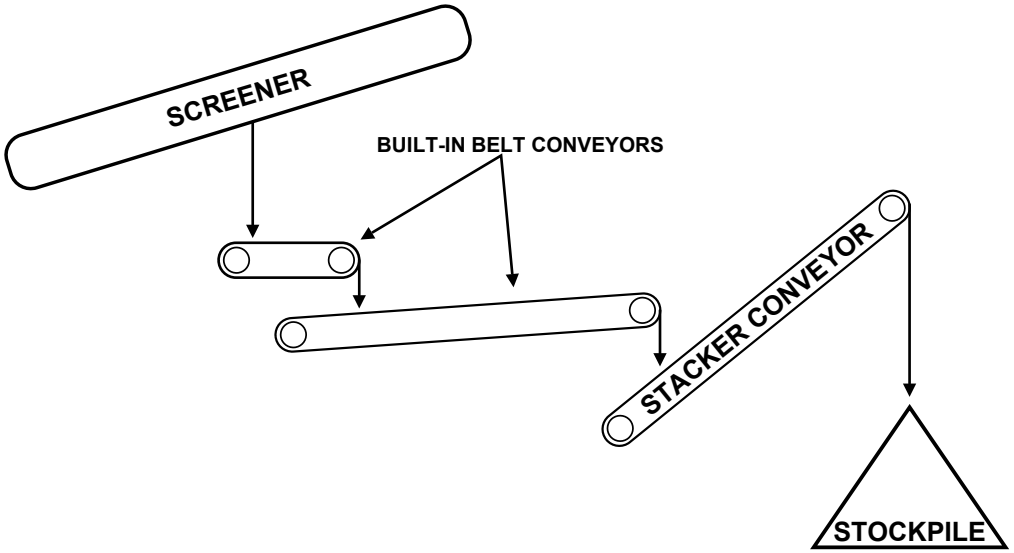
Overall Fuel Consumption	
40	gal/hr all engines
480	GAL / day
150	MGAL / year

*** grams/hr = (EF * $BHP_{_Crusher1}$) + (EF * $BHP_{_Crusher2}$) + (EF*$BHP_{_Screener}$) + (EF*$BHP_{_Stacker}$)**

EXCALIBUR SITE SERVICES, LLC.

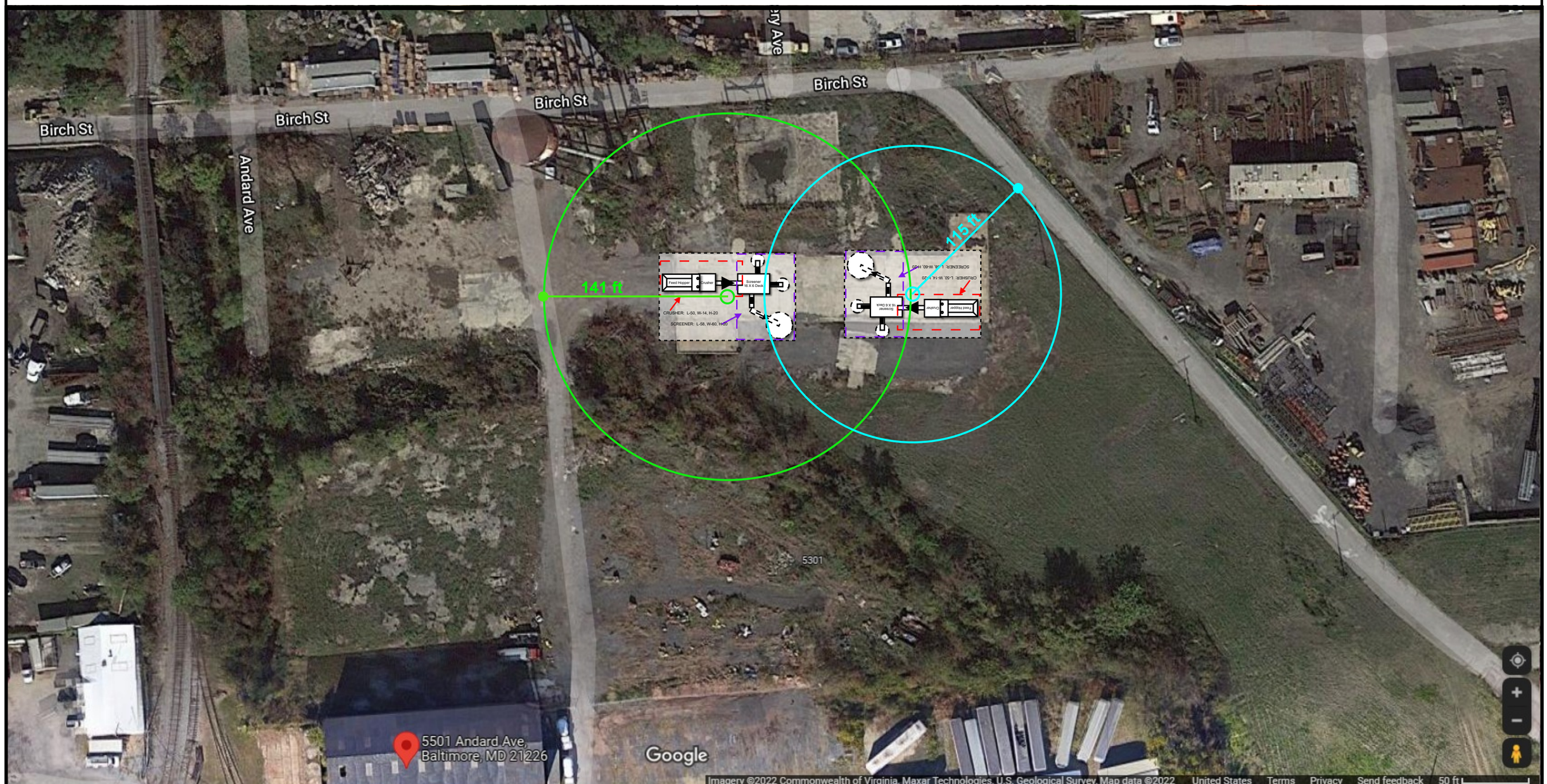
JAW CRUSHER





1500 Aspen Street, Baltimore, MD 21226

EXCALIBUR SITE SERVICES, LLC



SATELLITE IMAGE WITH CRUSHERS OVERLAID

5501 ASPEN STREET, BALTIMORE, MD

PERMIT TO CONSTRUCT APPLICATION
FOR
CRUSHING & SCREENING PLANT
WITH A
IMPACT CRUSHER & SCREENER

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard ■ Baltimore, Maryland 21230
(410) 537-3230 ■ 1-800-633-6101 ■ www.mde.state.md.us

Air and Radiation Management Administration ■ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct ☒ Registration Update ☐ Initial Registration ☐

1A. Owner of Equipment/Company Name

EXCALIBUR SITE SERVICES, LLC.

Mailing Address

1500 ASPEN STREET
Street Address

BALTIMORE | MD | 21226
City | State | Zip

Telephone Number 410.360.7645

Signature

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No. (1-2) | Premises No. (3-6)
Registration Class (7) | Equipment No. (8-11)
Data Year (12-13) | Application Date

CLARENCE L. CLAYTOR, OWNER
Print Name and Title | Date

1B. Equipment Location and Telephone Number (if different from above)

5301 ANDARD ST.
Street Number and Street Name

BALTIMORE | MD | 21226
City/Town | State | Zip | Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status (15)	New Construction Begin (MM/YY) (16-19)	New Construction Completed (MM/YY) (20-23)	Existing Initial Operation (MM/YY) (20-23)
A	0322	0322	

4. Describe this Equipment: **Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)**

PLANT B: One Crushing & Screening Plant equipped with: One (1) 300 ton per hour IMPACT Crusher, powered by a diesel-fired Tier 3 engine rated at 350 brake horsepower; one (1) 480 ton per hour Screener, powered by a diesel-fired Tier 3 engine rated at 130 brake horsepower with four associated conveyors; and one (1) Radial Stacker, powered by a diesel-fired Tier 3 engine rated at 50 brakehorsepower.

5. Workmen's Compensation Coverage WCV6177419 (Binder/Policy Number) 6-Nov-2022 (Expiration Date)

Company ACCIDENT FUND GENERAL

NOTE: Before a Permit to Construct may be issued by the Department, the appicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 6

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name _____ Title _____

Company _____

Mailing Address/Street _____

City/Town _____ State _____ Telephone (_____) _____

8. Major Activity, Product or Service of Company at this Location

RECYCLING CENTER FOR WASTE ASPHALT PAVEMENT MATERIALS, WASTE CONCRETE, BLOCK, & BRICK MATERIALS, BUILDING DEMOLITION MATERIALS, ETC.

9. Control Devices Associated with this Equipment

NONE [ ] 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other [X] 24-9 Describe **WATER SUPPRESSION**

10. Annual Fuel Consumption for this Equipment

D = Diesel oil

OIL - 1000 GALLONS	SULFUR %	GRADE	NATURAL GAS - 1000 FT^3	LP GAS - 100 GALLONS	GRADE
150	15 PPM	D			
26-31	32-33	34	35-41	42-45	

COAL - TONS	SULFUR %	ASH %	WOOD - TONS	MOISTURE %
46-52	53-55	56-58	59-63	64-65

OTHER FUELS _____ [ ] 66-1 ANNUAL AMOUNT CONSUMED _____
(Specify Type) (Specify Units)

OTHER FUELS _____ [ ] 66-2 ANNUAL AMOUNT CONSUMED _____
(Specify Type) (Specify Units)

1 = Coke 2 = COG 3 = BFG 4 = Other

11. OPERATING SCHEDULE (for this equipment)

Continuous Operation	Batch Process	Hours per Batch	Batch per Week	Hours per Day	Days Per Week	Days per year
X				12	6	312
67-1	67-2	68-69		70-71	72	73-75

Seasonal Variation in Operation:

No Variation	Winter Percent	Spring Percent	Summer Percent	Fall Percent
X				
76	77-78	79-80	81-82	83-84

(Total Seasons= 100%)

12. Equivalent Stack Information- is Exhaust through Doors, Window, etc. Only? (Y/N) **Y** 85

If not, then

Height Above Ground (FT)	Inside Diameter at Top	Exit Temperature (^{O}F)	Exit Velocity (FT/SEC)
86-88	89-91	92-95	96-98

NOTE:

Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)

Is any of this data to be considered confidential? (Y or N)

INPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. WASTE ASPHALT PAVEMENT		180	TONS	500,000	TONS
2. MATERIALS, WASTE CONCRETE,					
3. BLOCK, & BRICK MATERIALS,					
4. BUILDING DEMOLITION MATERIALS,					
5. ETC.					
6.					
7.					
8.					
9.					
TOTAL		180	TONS	500,000	TONS

14. Output Materials (for this equipment)

Process/Product Stream

OUTPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1. CRUSHED ASPHALT PAVEMENT		180	TONS	500,000	TONS
2. MATERIALS, CONCRETE, BLOCK, &					
3. BRICK MATERIALS, BUILDING					
4. MATERIALS, ETC.					
5.					
6.					
7.					
8.					
9.					
TOTAL		180	TONS	500,000	TONS

15. Waste Streams - Solid and Liquid

OUTPUT RATE

NAME	CAS NO. (IF APPLICABLE)	PER HOUR	UNITS	PER YEAR	UNITS
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
TOTAL					

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
0	0.11	33
99-104	105-110	111-116

Carbon Monoxide	Volatile Organic Compunds	PM-10
42	10	3
117-122	123-128	129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter	Oxides of Sulfur	Oxides of Nitrogen
135-139	140-144	145-149

Carbon Monoxide	Volatile Organic Compunds	PM-10
		5
150-154	155-159	160-164

Method Used to Determine Emissions **(1= Estimate 2= Emission Factor 3= Stack Test 4= Other)**

TSP	SOX	NOX	CO	VOC	PM10
	4	4	4	4	2,4
165	166	167	168	169	170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local **Date Rec'd. State** **Return to Local Jurisdiction**

Date _____ By _____

Reviewed by Local Jurisdiction **Reviewed by State**

Date _____ By _____ Date _____ By _____

19. Inventory Date **Month/Year** **Equipment Code** **SCC Code**

171-174 175-177 178-185

20.

Annual Operating Rate	Maximum Design Hourly Rate	Permit to Operate Month	Transaction Date (MM/DD/YR)
188-192	193-199	200-201	202-207

Staff Code	VOC Code	SIP Code	Regulation Code	Confidentiality
208-210	211 212	213 214	215-218	219

Point Description

220-238

Action

239

A: Add
C: Change

MARYLAND DEPARMENT OF THE ENVIRONMENT
1800 Washington Blvd ● Baltimore, Maryland 21230
(410) 537-3230 ● 1-800-633-6101 ● www.mde.state.md.us

Air and Radiation Management Administration ● Air Quality Permits Program

Summary of Demonstrations for Meeting the Ambient Impact Requirement (26.11.15.05) and the T-Bact Requirement (26.11.15.06)

DO NOT WRITE IN THIS SPACE

Company Name EXCALIBUR SITE SERVICES, LLC.

1. Summary of T-BACT Demonstration: List all emission reduction options considered in determining T-BACT starting with the option that reduces the emissions the most. Supporting documentation must be

Emission Reduction Option	% Emission Reduction	COSTS Capital	COSTS Annual Operating
1. WATER SPRAY	90%		
2.			
3.			
4.			
5.			

2. Identify the emission reduction option selected as T-BACT and briefly explain why this is the best selectic Supporting documentation must be attached.

3. List screening levels and highest estimated off-site concentrations (ug/m3) resulting from **premises-wide allowable emissions** (1) of each Toxic Air Pollutant that is covered by the regulations and discharged from the installation or source applying for the permit. See the General Instructions for more detail. Supporting documentation **must** be attached.

	Toxic Air Pollutant	CAS Number	SCREENING LEVEL(S) 1-HR	8-HR	Annual	OFF-SITE CONCENTRATIONS 1-HR	8-HR	Annual
1	CRYSTALLINE SILICA	14808-60-7	The estimated emission rate of 0.0006 lb/hr, is less than the COMAR 26.11.15.06 threshold of 0.003 lb/hour, so the plant is in compliance and mathematical modeling is not necessary.					
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

☐ If unable to use a Screening Analysis, check the box, and attach the Second Tier Analysis or Special Permit request to this form.

(1) **Premises** is defined as: "all the installations or other sources that are located on contiguous or adjacent properties and that are under the control of one person or under common control of a group of persons" (COMAR 26.11.15.01B (12)).

Allowable Emissions are defined as: "the maximum emissions a source or installation is capable of discharging after consideration of any physical or operational limitations required by this subtitle or by the enforceable conditions included in an applicable air quality permit to construct, permit to operate, secretarial order, plan for compliance, consent agreement, or court order" (COMAR 26.11.15.01B (2)).

MARYLAND DEPARMENT OF THE ENVIRONMENT

1800 Washington Blvd ● Baltimore, Maryland 21230

(410) 537-3230 ● 1-800-633-6101 ● www.mde.state.md.us

Air and Radiation Management Administration ● Air Quality Permits Program

Emissions Data

Fill out one Form 5B for each stack or other emission point subject to the regulations (see the General Instructions for more detail).

DO NOT WRITE IN THIS SPACE

Company Name EXCALIBUR SITE SERVICES, LLC.

1. Number Identifying this Emission Point on Required Plot Plan _____
   (If applicable, list company's internal I.D. _____)

2. Brief description of Emission Point, Associated Equipment and Control Devices
   MATERIAL TRANSFER POINTS, CRUSHER, and SCREENER FUGITIVE EMISSIONS, ENGINE EMISSIONS

3. Emission Schedule (for this stack or emission point)

Continuous	Intermittent	Minutes/Hour	Hours/Day	Days/Week	Weeks/Year
X		60	12	6	52

Seasonal Variation: None X Winter % ____ Spring % ____ Summer% ____ Fall% ____

4. Stack Information

Height above ground (ft)	Inside Diameter at top of round stack (ft)	Exit Temperature (oF)
N/A	N/A	N/A
Height above structures (ft)	**Dimensions at top of rectangular stack (ft)**	**Exit Velocity (ft/min)**
N/A		N/A
Distance to Nearest Property Line (ft)		**Gas Volume (acfm)**
		N/A

Dimensions of Building Stack is on (ft): Height ____ Length ____ Width ____

5. Control Devices Associated with this Stack or Emission Point

Control Device	Number	Control Device	Number
0. None		7. Elec. Precipitator	
1. Simple Cyclone		8. Baghouse	
2. Multiple Cyclone		9. Thermal Afterburner	
3. Spray Tower		10. Catalytic Afterburner	
4. Absorption Tower		11. Other (specify)	
5. Venturi Scrubber			
6. Carbon Adsorber			

6. Criteria Pollutant Emissions (attach supporting documentation)

Criteria Pollutants	ESTIMATED EMISSIONS Design Capacity (lb/hr)	Projected (lb/hr)	Operations (1) (ton/year)
$PM_{2.5}$	0.26	0.26	0.40
PM_{10}	0.21	0.21	0.40
Oxides of Sulfur	0.01	0.01	0.02
Oxides of Nitrogen	2.76	2.76	5.16
Carbon Monoxide	3.47	3.47	6.50
VOC (total)	0.80	0.80	1.51
Lead			

7. Toxic Air Pollutant Emissions (attach supporting documentation)

		ESTIMATED EMISSIONS Design Capacity	Projected Operations (1)		Used for Form 5A, Part 3 (2)	
Toxic Air Pollutant (list all)	CAS Number	(lb/hr)	(lb/hour)	(ton/year)	(lb/hour)	(ton/year)
1. CRYSTALLINE SILICA	14808-60-7	5.13 E-04	5.13 E-04	9.60 E-04	5.13 E-04	9.60 E-04
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

(1) Based on the emission schedule reported in Block three of this form.

(2) This column must be filled in with the emission estimates used to demonstrate compliance with the regulations. If continuous emissions at design capacity allow you to demonstrate compliance with all air regulations, then these emissions should be listed here. If the air toxic regulations or any other regulations require you to discharge less than continuously at design capacity, then these emissions should be listed here.

EMISSION CALCULATIONS FOR: *EXCALIBUR SITE SERVICES, LLC.*
BALTIMORE, MD 21226

AT STEADY STATE CONDITIONS	Feed Materials	
Recycle Loop:	0%	processed through the Impact Crusher
Screener Processes:	100%	processed through Screener
Screener Built-in under-conveyor:	55%	transferred to Underconveyor, which discharges to Stacker
Stacking Conveyor:	55%	transferred to Stacker
Dropped to Built-in Discharge Conveyors:	100%	of feed materials
Dropped to Stockpiles:	100%	of feed materials

PRODUCTION BASIS: FEED MATERIALS TRANSFERRED BY EXCAVATOR TO FEED HOPPER OF *IMPACT* CRUSHER

ACTIVITY DESCRIPTION	Drops	Transfers	Crusher	Screener
Impact Crusher receives, processes & discharges materials			100%	
Screener receives from Crusher & processes materials				100%
Screener discharges materials to three conveyors		100%		
Conveyor 1 is an under-conveyor which discharges to Conveyor 2		55%		
Conveyor 2 discharges to a Stacker Conveyor		55%		
Conveyor 3 discharges to a Stockpile				
Conveyor 4 discharges to a Stockpile	100%			
Stacker Conveyor discharges to a Stockpile				
	1.00	2.10	1.00	1.00

EMISSIONS ESTIMATE

The fugitive emissions from the Crushing and Screening plant are generated from 4 different types of emission points:

Emission Factor Units: lb/ton of materials processed	PM10	PM2.5	Quantity	PM10	PM2.5
Material Drops (material handling activities)*	4.60E-05	1.45E-05	1.00	4.60E-05	1.45E-05
Material transfers to conveyors**	4.60E-05	1.40E-05	2.10	9.66E-05	2.94E-05
Crusher emissions (includes feed and discharge emissions)	2.45E-04	7.70E-05	1.00	2.45E-04	7.70E-05
Screener emissions (includes feed emissions only)	7.40E-04	5.00E-05	1.00	7.40E-04	5.00E-05

AP-42, Section 11.19, provides emission factors for specific, defined activities only. It does not provide emission factors for general material handling. Therefore, an emission factor from WEBFIRE was used to estimate emissions for general material handling. AP-42's Primary Crushing emission factor is for TPM only, so following the footnote C recommendation in Table 11.19.2-2, the emission factor was adjusted for particle size using particle size multipliers from Section 13.2.4. AP-42 provides a PM-10 emission factor only for Conveyor Transfers, so the same particle size multipliers were used to estimate emission factors for PM2.5 for conveyor transfers.

* Excavator to Feed Hopper, Discharge to Stockpile.
**Conveyor transfers: Screener discharges to as many as four (4) built-in Conveyors (100% of original feed materials).

Based on these assumptions, the emission point quantity listed above was determined.

Maximum Hourly Production Rate: *300* *tons of Materials processed*

Permit Limit for Production:	*500,000*	*tons of Materials processed*
Total Annual Hours of Operations:	*3,744*	*hours of production time*
Total Annual Days of Operations:	*312*	*days of production*

ANNUAL EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.15E-02	3.61E-03
Material transfers to conveyors, which are drops to belt conveyors	4.83E-02	1.47E-02
Total Misc. Handling Operations	5.98E-02	1.83E-02
Crusher emissions	6.13E-02	1.93E-02
Screener emissions	1.85E-01	1.25E-02
Total ton/yr for each particle size	**3.06E-01**	**5.01E-02**

*ER = (EF * EmisPtQty) * Tons/YEAR / 2000*

DAILY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.66E-01	5.20E-02
Material transfers to conveyors, which are drops to belt conveyors	3.48E-01	1.06E-01
Total Misc. Handling Operations	5.13E-01	1.58E-01
Crusher emissions	8.82E-01	2.77E-01
Screener emissions	2.66E+00	1.80E-01
Total lb/day for each particle size	**4.06E+00**	**6.15E-01**

*ER = (EF * EmisPtQty) * Tons/day*

HOURLY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.38E-02	4.34E-03
Material transfers to conveyors, which are drops to belt conveyors	2.90E-02	8.82E-03
Total Misc. Handling Operations	4.28E-02	1.32E-02
Crusher emissions	7.35E-02	2.31E-02
Screener emissions	2.22E-01	1.50E-02
Total lb/hr for each particle size	**3.38E-01**	**5.13E-02**

*ER = (EF * EmisPtQty) * DesignRate (Tons/hr)*

CRYSTALLINE SILICA ESTIMATE

3.38E-01	lb/hour, PM10 emissions
15.2%	fraction of PM10 that is respirable
1%	of respirable particulate that is CS
0.00051	lb/hour, Crystalline Silica

Emission Point	SCC	Emission Factor	PT Type	Control method
Primary Crushing		2.45 E-04	PM10	Wet Suppression
		7.70 E-05	PM2.5	

from AP-42 Section 13.2.4 Aggregate Handling and Storage Piles

Particle Size Multipliers (k) are:

< 30 µm	0.74
< 10 µm	0.35
< 2.5 µm	0.11

FROM FIRE

Emission Point	SCC	Emission Factor	PT Type	Control method
Secondary Crushing/Screening	3-05-020-02	7.40E-04 2.33E-04	PM10, primary PM2.5, primary*	Wet Suppression
Misc. Operations: Screen/Conveyor/ Handling	3-05-020-06	4.60E-05 1.45E-05	PM10, primary PM2.5, primary*	Wet Suppression

* this EF was calculated: the Particle Size Multipliers provided in Section 13.2.4 of AP-42 were used to ratio the PM_{10} emission factor to a $PM_{2.5}$ emission factor, as recommended by Footnote C in Table 11.19.2-2

SO2 Emission Factor	
Ultra Low Sulfur Diesel	
15	PPM
2	lb SO2/lb S
6.943	lbs/gal Diesel
0.00020829	lb SO2/gal
94.5	g SO2/MGAL

WEBFIRE

as of September 2016
USEPA CHIEF

Level1 Industrial Processes
Level2 Mineral Products
Level3 Stone Quarrying - Processing (See also 305320)

FACTORID	SCC	SCCID	LEVEL 4	POLLUTANT	CONTROL ID	CONTROL	Primary	FACTOR	UNIT	MEASURE	MATERIAL	ACTION	AP42 SECTION	NOTES	REF_DESC		QUALITY	Created	Dupcount	Dupreason
19598	3-05-020-31	5881	Truck Unloading	PM10, primary	129	UNCONTROLLED		1.60E-05	Lb	Tons	Raw Material	Processed	11.19.2		EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E		0	
19563	3-05-020-02	5862	Secondary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		7.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	0	
19571	3-05-020-03	5863	Tertiary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		5.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	2	Crushing
19572	3-05-020-03	5863	Tertiary Crushing/Screening	PM10, primary	201	WET SUPPRESSION		7.40E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	C	8/1/2004	2	Screening
19573	3-05-020-03	5863	Tertiary Crushing/Screening	PM2.5, primary	201	WET SUPPRESSION		1.00E-04	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E	8/1/2004	2	Crushing
19574	3-05-020-03	5863	Tertiary Crushing/Screening	PM2.5, primary	201	WET SUPPRESSION		5.00E-05	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	E	8/1/2004	2	Screening
19586	3-05-020-06	5866	Miscellaneous Operations: Screen/Convey/Handling	PM10, primary	201	WET SUPPRESSION		4.60E-05	Lb	Tons	Material	Throughput	11.19.2	Controlled sou	EPA. August, 2004. Section 11.19.2	Crushed Stone Proce	D	8/1/2004	0	
			Miscellaneous Operations: Screen/Convey/Handling	PM25, primary[1]				1.30E-05	lb	tons										

[1](found in AP42 Section 11.19.2.)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
Air and Radiation Management Administration / Air Quality Permits Program
1800 Washington Boulevard, STE 720 Baltimore, Maryland 21230-1720
(410) 537-3230 • 1-800-633-6101 • www.mde.state.md.us

Mail application to
MDE/ARMA
1800 Washington Blvd, Suite 720
Baltimore, MD 21203-1720

Don't forget to:
✓ *Sign the application*
✓ *Include vendor literature*

Air Quality Permit to Construct & Registration Application for

INTERNAL COMBUSTION ENGINES

(Electrical Power Generators, Power Equipment, Fire Protection Pumps)

1) Applicability

You must check off one of the following items to use this application form

- [ ] Electrical power generation (off grid, base load, peak, load shaving, etc.)
  - Use MDE Form 42 for emergency use only generators
- [X] Power equipment (hydraulic, mechanical, etc.)
- [ ] Fire protection pump

For electrical power generators only, *you must check off one of the following items to use this application form*

- [ ] I have a CPCN Exemption from the Public Service Commission for this generator (contact the Public Service Commission at 410.767.8131)
- [ ] This generatore was installed before October 1, 2001 and I do not need a CPCN Exemption

2) Business/Institution/Facility where the engine will be located [ ] Check if this is a federal facility

Name: EXCALIBUR SITE SERVICES, LLC. Phone: 410.360.7645

Street Address: 5301 ANDARD ST.

City: BALTIMORE State: MD Zip Code: 21226 County: BALTIMORE CITY

3) Owner/Operator of the engine (if different than above)

Name: EXCALIBUR SITE SERVICES, LLC. Phone: _____

Mailing Address: 1500 ASPEN STREET

City: BALTIMORE State: MD Zip Code: 21226

4) Installer [ ] Check if installer is applying for permit. If checked, complete the following:

Name: _____ Phone: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

5) Engine Information

Installation Date	Engine Manufacturer & Model	Horsepower	Manufacture Date	Fuel Type
	CATERPILLAR, C9	350	Tier 3	DIESEL
	CATERPILLAR, C4.4	130	Tier	DIESEL
	KUBOTA, V2203	50	Tier 3	DIESEL

6) Operating Information

Intended use desription: (Examples, "a portable generator at a construction site" or "peak shaving with the emergency generator", etc.)

THE ENGINES ARE USED TO POWER ONE CRUSHER, ONE SCREENER, AND ONE STACKING CONVEYOR, RESPECTIVELY, FOR PURPOSE OF PROCESSING ROAD AND CONSTRUCTION DEBRIS INTO A USABLE SIZE FOR REUSE ELSEWHERE

Hours per day	Hours per year
12	3744

7) Required Attachments

(Check that they are attached)

- [X] Vendor literature
- [ ] CPCN Exemption from the Public Service Commission
  - Electrical generators only
  - Not needed for generators installed before October 1, 2001

8) Workers Compensation (Environmental article §1-202)

Workers insurance policy or binder number: WCV6177419

- [ ] Check if self employed or otherwise exempt from this requirement

" I CERTIFY UNDER PENALTY OF LAW THAT THE INFORMATION SUBMITTED IN THIS REQUEST FOR COVERAGE IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

CLARENCE L. CLAYTOR, OWNER

Owners Signature Printed Name and Title Date

LEAVE BLANK, MDE use only

- [ ] Permit
- [ ] Registration (Less than 1,000 brake horsepower & installed prior to 11/24/03)

Permit/Registration Number: _____ - _____ - _____ - _____

AI: _____

	SOx	NOx	CO	VOC	PM	PM-10
Emissons Stack						
Fugitive						

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/17/2021

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Welch, Graham & Ogden Ins., Inc.
7723 Ashton Avenue
Manassas VA 20109

CONTACT NAME: Lorraine Fischer
PHONE (A/C, No, Ext): (703) 530-1300 FAX (A/C, No): (703) 530-9994
E-MAIL ADDRESS: lfischer@wgoins.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Allied World Specialty Insurance Company	
INSURER B : Accident Fund General	12304
INSURER C : Ascot Specialty Insurance Company	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

Excalibur Site Services LLC
1500 Aspen St
Baltimore MD 21226

COVERAGES **CERTIFICATE NUMBER:** 21-22 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:			6004-1018	11/06/2021	11/06/2022	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
								$
A	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] OWNED AUTOS ONLY [ ] SCHEDULED AUTOS [ ] HIRED AUTOS ONLY [ ] NON-OWNED AUTOS ONLY			6000-1284	11/06/2021	11/06/2022	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	[X] UMBRELLA LIAB [X] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			ESXS2110000559-01	11/06/2021	11/06/2022	EACH OCCURRENCE	$ 1,000,000
							AGGREGATE	$ 1,000,000
								$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WCV6177419	11/06/2021	11/06/2022	[X] PER STATUTE [ ] OTH-ER	
							E.L. EACH ACCIDENT	$ 500,000
							E.L. DISEASE - EA EMPLOYEE	$ 500,000
							E.L. DISEASE - POLICY LIMIT	$ 500,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Insurance Verification

CERTIFICATE HOLDER

Maryland Dept. of the Environment
1800 Washington Blvd
Suite 720
Baltimore MD 21230-0715

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Lorraine Fischer

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ESTIMATE OF EMISSIONS FOR ENGINES

CRITERIA AIR POLLUTANTS

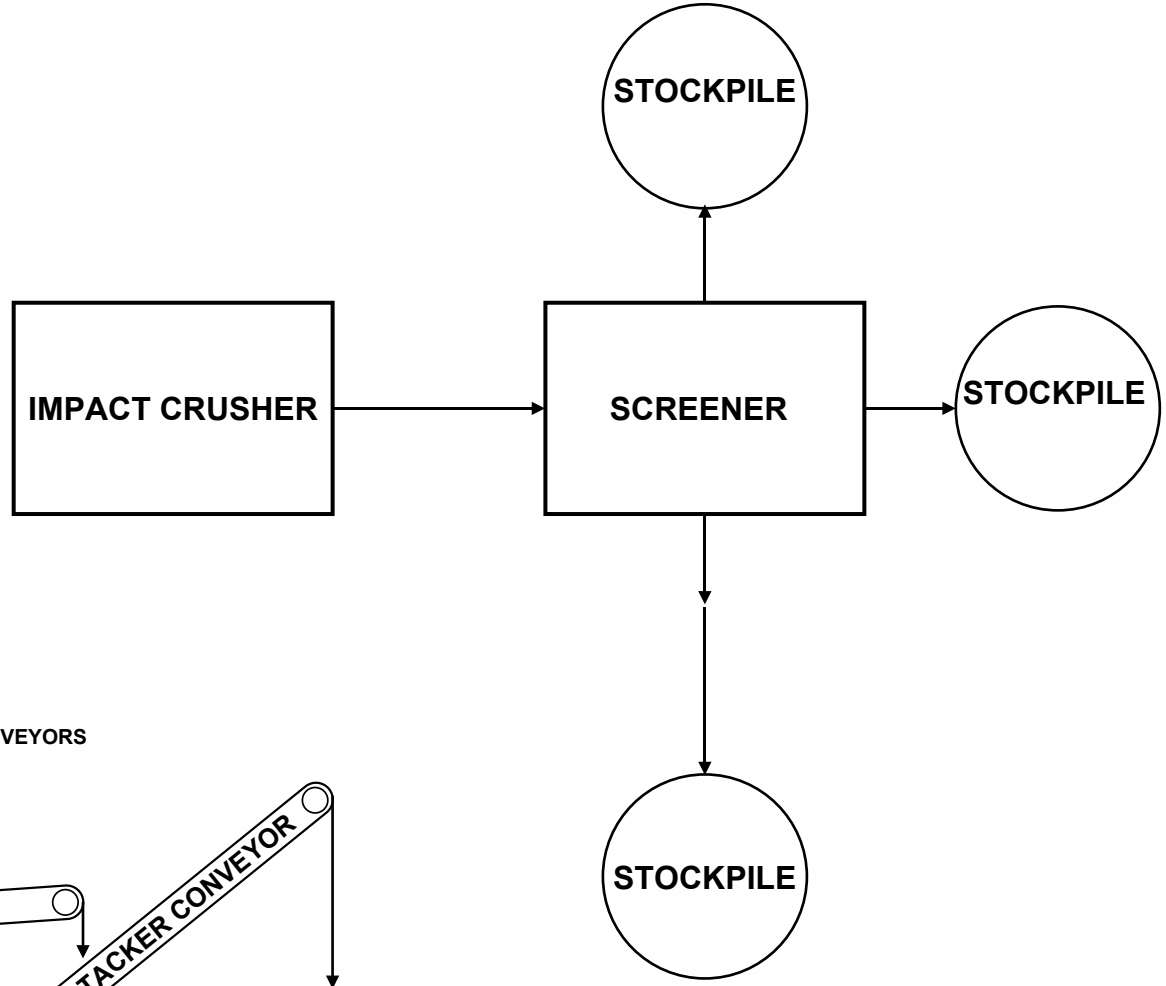
	Engines						
Equipment	**IMPACT CRUSHER**	**SCREENER**	**STACKER**				
Engine OEM	**CATERPILLAR**						
Engine Size, bHP	**350**	**130**	**50**				
Model #	**C9**	**C4.4**	**V2203**				
Tier Rating	**3**	**3**	**3**				
Fuel Rate (gal/hr)	**25**	**10**	**5**				
Daily Hours	**12**	**12**	**12**	**ESTIMATED EMISSION RATES**			
Annual Hours	**3744**	**3744**	**3744**				
Tier 3 emission factor units→	**g/bhp-hr**	**lb/hp-hr**	**lb/hp-hr**	**grams/hr***	**lb/hr**	**lbs/day**	**tons/year**
PM10	0.15	0.22	0.30	96	0.21	2.5	0.40
PM2.5	0.15	0.22	0.30	96	0.21	2.5	0.40
NOx	2.33	2.31	2.69	1250	2.76	33.1	5.16
TOC (HC, NMHC)	0.67	0.69	0.81	365	0.80	9.6	1.51
CO	2.60	3.70	3.70	1576	3.47	41.7	6.50
AP-42 emission factor units→	**lb / gal**				**lb/hr**	**lbs/day**	**tons/year**
SO_X	0.00021				0.01	0.1	0.02
GREENHOUSE GASES							
AP-42 emission factor units→	**lb/hp-hr**				**lb/hr**	**lbs/day**	**tons/year**
CO_2	1.15				403	4,830	753

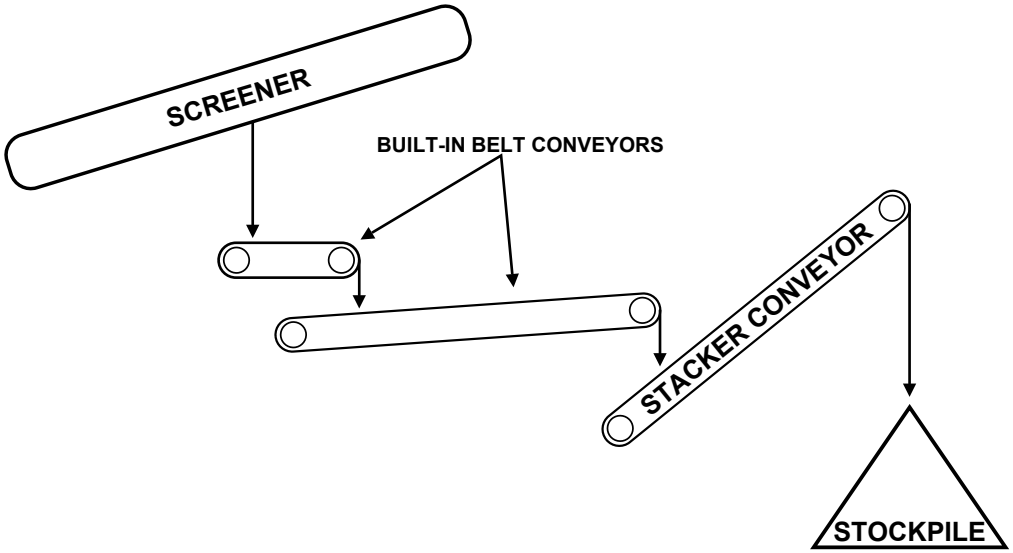
Overall Fuel Consumption	
40	gal/hr all engines
480	GAL / day
150	MGAL / year

*** grams/hr = (EF * $BHP_{_Crusher1}$) + (EF * $BHP_{_Crusher2}$) + (EF*$BHP_{_Screener}$) + (EF*$BHP_{_Stacker}$)**

EXCALIBUR SITE SERVICES, LLC.

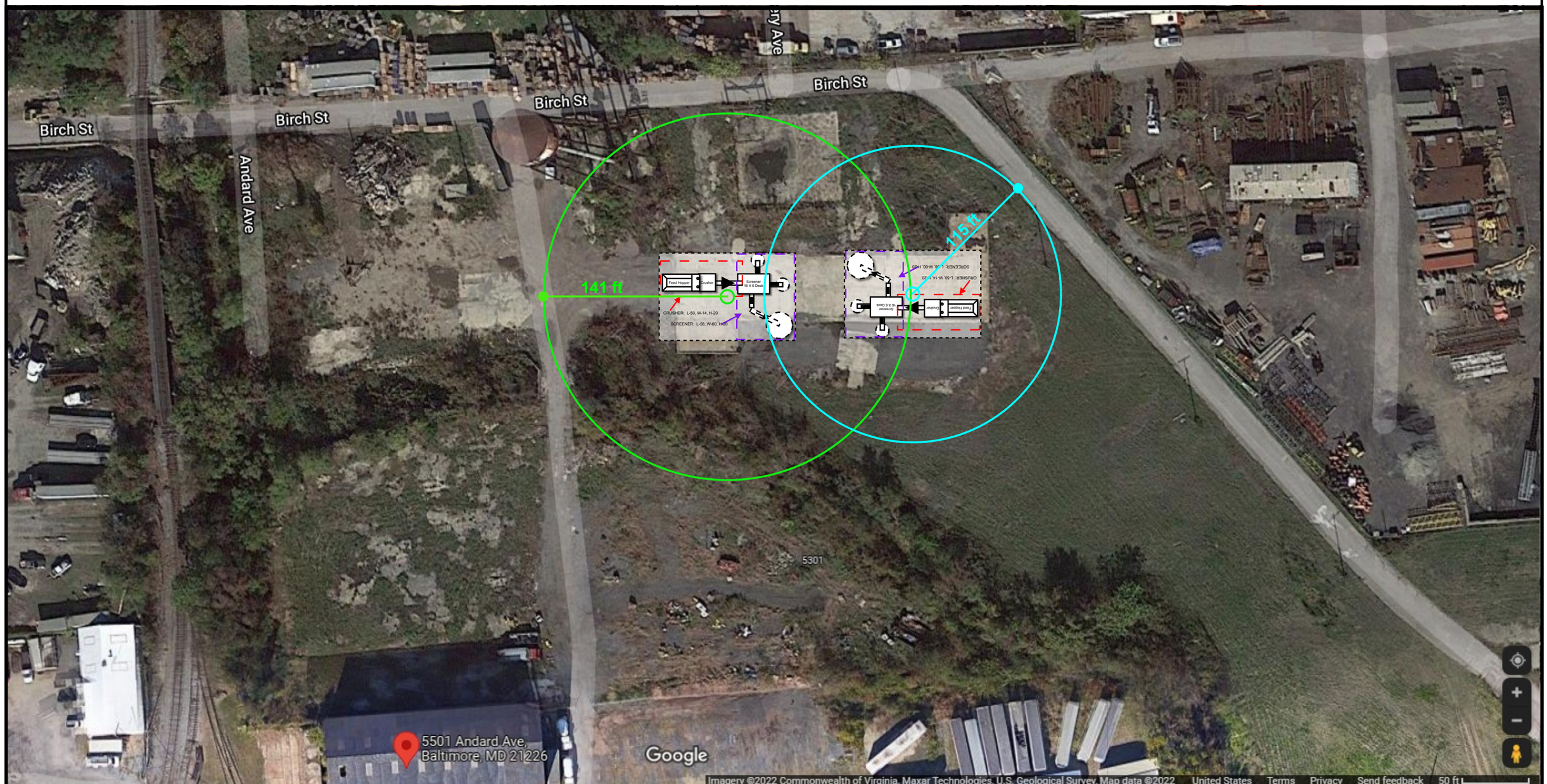
IMPACT CRUSHER





1500 Aspen Street, Baltimore, MD 21226

EXCALIBUR SITE SERVICES, LLC



SATELLITE IMAGE WITH CRUSHERS OVERLAID

5501 ASPEN STREET, BALTIMORE, MD

EMISSION CALCULATIONS
FOR
CRUSHING & SCREENING PLANT
WITH
TWO CRUSHERS
AND
ONE SCREENER

EMISSION CALCULATIONS FOR: ***EXCALIBUR SITE SERVICES, LLC.***
BALTIMORE, MD 21226

EMISSIONS CALCULATIONS FOR TWO CRUSHERS & ONE SCREENER

AT STEADY STATE CONDITIONS	Feed Materials	
Recycle Loop:	60%	processed through the Impact Crusher
Screener Processes:	160%	processed through Screener
Screener Underconveyor:	55%	transferred to Underconveyor, which discharges to Stacker
Stacker Conveyor:	55%	transferred to Stacker
Dropped to Built-in Conveyors:	100%	of feed materials
Dropped to Stockpiles:	100%	of feed materials

PRODUCTION BASIS: FEED MATERIALS TRANSFERRED BY EXCAVATOR TO FEED HOPPER OF JAW CRUSHER

ACTIVITY DESCRIPTION	Drops	Transfers	1^{O} Crusher	2^{O} Crusher	Screener
Jaw Crusher receives, processes & discharges materials			100%		
Screener receives from TWO Crushers & processes materials					160%
Screener discharges materials to three conveyors		160%			
Conveyor 1 is an under conveyor which discharges to Conveyor 2		55%			
Conveyor 2 discharges to a Stacker Conveyor		55%			
Conveyor 3 discharges to a Stockpile	45%				
Stacker Conveyor discharges to Stockpile	55%				
Impact Crusher receives, processes & discharges materials				60%	
	1.00	2.70	1.00	0.60	1.60

EMISSIONS ESTIMATE

The fugitive emissions from the Crushing and Screening plant are generated from 4 different types of emission points:

Emission Factor Units: lb/ton of materials processed	PM10	PM2.5	Quantity	PM10	PM2.5
Material Drops (material handling activities)*	4.60E-05	1.45E-05	1.00	4.60E-05	1.45E-05
Material transfers to conveyors**	4.60E-05	1.40E-05	2.70	1.24E-04	3.78E-05
1^{O} Crusher emissions (includes feed and discharge emissions)	2.45E-04	7.70E-05	1.00	2.45E-04	7.70E-05
2^{O} Crusher emissions (includes feed and discharge emissions)	7.40E-04	2.33E-04	0.60	4.44E-04	1.40E-04
Screener emissions (includes feed emissions only)	7.40E-04	5.00E-05	1.60	1.18E-03	8.00E-05

AP-42, Section 11.19, provides emission factors for specific, defined activities only. It does not provide emission factors for general material handling. Therefore, an emission factor from WEBFIRE was used to estimate emissions for general material handling. AP-42's Primary Crushing emission factor is for TPM only, so following the footnote C recommendation in Table 11.19.2-2, the emission factor was adjusted for particle size using particle size multipliers from Section 13.2.4. AP-42 provides a PM-10 emission factor only for Conveyor Transfers, so the same particle size multipliers were used to estimate emission factors for PM2.5 for conveyor transfers.

* Excavator to Feed Hopper, Discharge to Stockpile.
**Conveyor transfers: Screener discharges to as many as four (4) built-in Conveyors (100% of original feed materials).

Based on these assumptions, the emission point quantity listed above was determined.

Maximum Hourly Production Rate:	*300*	*tons of Materials processed*
Permit Limit for Production:	*1,123,200*	*tons of Materials processed*
Total Annual Hours of Operations:	*3,744*	*hours of production time*
Total Annual Days of Operations:	*312*	*days of production*

ANNUAL EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	2.58E-02	8.12E-03
Material transfers to conveyors, which are drops to belt conveyors	1.40E-01	4.25E-02
Total Misc. Handling Operations	1.65E-01	5.06E-02
1^{O} Crusher emissions	1.38E-01	4.32E-02
2^{O} Crusher emissions	2.49E-01	7.84E-02
Screener emissions	6.65E-01	4.49E-02
Total ton/yr for each particle size	**1.22E+00**	**2.17E-01**

*ER = (EF * EmisPtQty) * Tons/YEAR / 2000*

DAILY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.66E-01	5.20E-02
Material transfers to conveyors, which are drops to belt conveyors	4.47E-01	1.36E-01
Total Misc. Handling Operations	6.13E-01	1.88E-01
Crusher emissions	8.82E-01	2.77E-01
Screener emissions	4.26E+00	2.88E-01
Total lb/day for each particle size	**5.76E+00**	**7.53E-01**

*ER = (EF * EmisPtQty) * Tons/day*

HOURLY EMISSIONS	PM10	PM2.5
Material Drops which are material handling activities	1.38E-02	4.34E-03
Material transfers to conveyors, which are drops to belt conveyors	3.73E-02	1.13E-02
Total Misc. Handling Operations	5.11E-02	1.57E-02
Crusher emissions	7.35E-02	2.31E-02
Screener emissions	3.55E-01	2.40E-02
Total lb/hr for each particle size	**4.80E-01**	**6.28E-02**

*ER = (EF * EmisPtQty) * DesignRate (Tons/hr)*

CRYSTALLINE SILICA ESTIMATE

4.80E-01	lb/hour, PM10 emissions
13.1%	fraction of PM10 that is respirable
1%	of respirable particulate that is CS
0.00063	lb/hour, Crystalline Silica

Emission Point	SCC	Emission Factor	PT Type	Control method
Primary Crushing		2.45 E-04	PM10	Wet Suppression
		7.70 E-05	PM2.5	

from AP-42 Section 13.2.4 Aggregate Handling and Storage Piles

Particle Size Multipliers (k) are:

< 30 µm	0.74
< 10 µm	0.35
< 2.5 µm	0.11

FROM FIRE

Emission Point	SCC	Emission Factor	PT Type	Control method
Secondary Crushing/Screening	3-05-020-02	7.40E-04 2.33E-04	PM10, primary PM2.5, primary*	Wet Suppression
Misc. Operations: Screen/Conveyor/ Handling	3-05-020-06	4.60E-05 1.45E-05	PM10, primary PM2.5, primary*	Wet Suppression

* this EF was calculated: the Particle Size Multipliers provided in Section 13.2.4 of AP-42 were used to ratio the PM_{10} emission factor to a $PM_{2.5}$ emission factor, as recommended by Footnote C in Table 11.19.2-2

SO2 Emission Factor	
Ultra Low Sulfur Diesel	
15	PPM
2	lb SO2/lb S
6.943	lbs/gal Diesel
0.00020829	lb SO2/gal
94.5	g SO2/MGAL

ESTIMATE OF EMISSIONS FOR ENGINES

CRITERIA AIR POLLUTANTS

	Engines							
Equipment	**JAW CRUSHER**	**IMPACT CRSH**	**SCREENER**	**STACKER**				
Engine OEM	**CATERPILLAR**	**CATERPILLAR**	**CATERPILLAR**	**CATERPILLAR**				
Engine Size, bHP	**350**	**350**	**130**	**50**				
Model #	**C9**	**C9**	**C4.4**	**V2203**				
Tier Rating	**3**	**3**	**3**	**3**				
Fuel Rate (gal/hr)	**25**	**25**	**10**	**5**				
Daily Hours	**12**	**12**	**12**	**12**	**ESTIMATED EMISSION RATES**			
Annual Hours	**3744**	**3744**	**3744**	**3744**				
Tier 3 emission factor units→	**g/bhp-hr**	**g/bhp-hr**	**lb/hp-hr**	**lb/hp-hr**	**grams/hr***	**lb/hr**	**lbs/day**	**tons/year**
PM10	0.15	0.15	0.22	0.30	149	0.33	3.9	0.61
PM2.5	0.15	0.15	0.22	0.30	149	0.33	3.9	0.61
NOx	2.33	2.33	2.31	2.69	2066	4.55	54.7	8.53
TOC (HC, NMHC)	0.67	0.67	0.69	0.81	599	1.32	15.9	2.47
CO	2.60	2.60	3.70	3.70	2486	5.48	65.8	10.3
AP-42 emission factor units→	**lb / gal**					**lb/hr**	**lbs/day**	**tons/year**
SO_X	0.00021					0.01	0.16	0.03

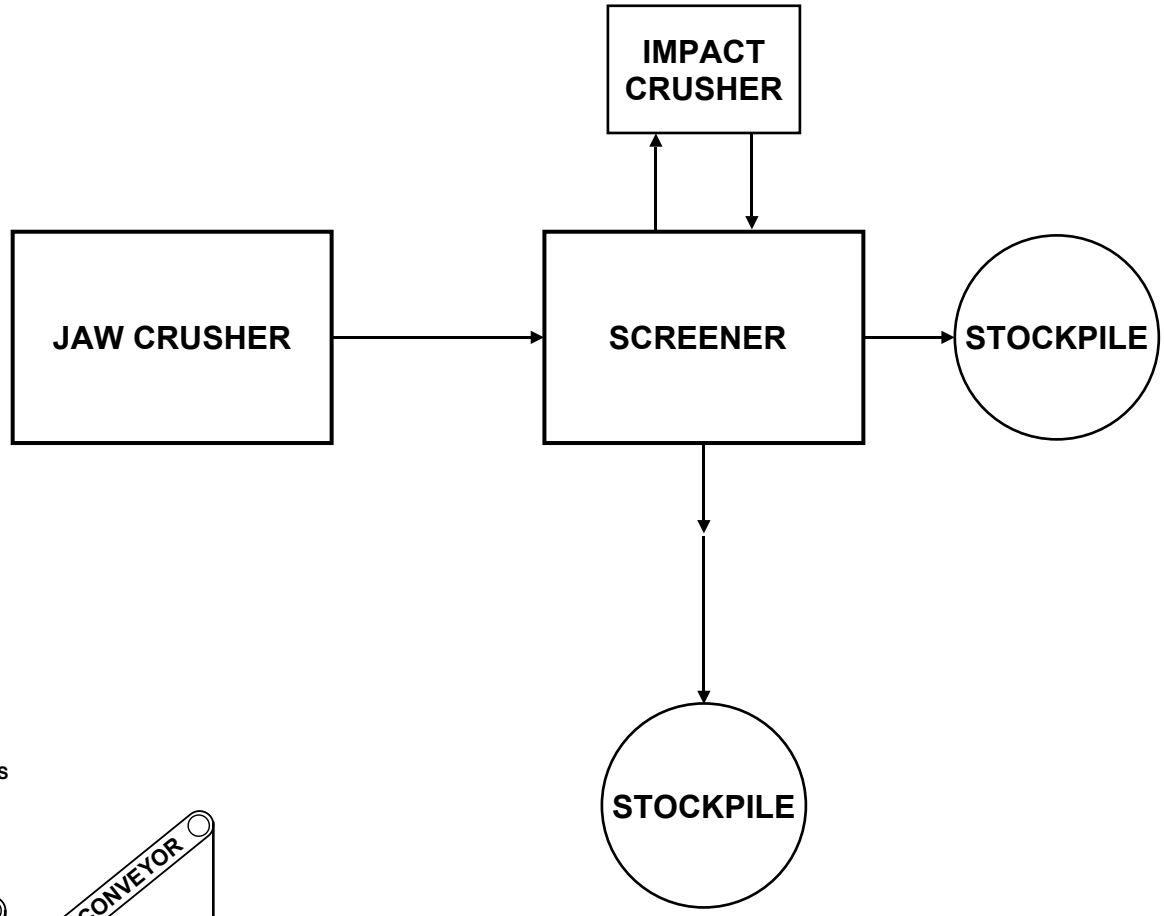
Overall Fuel Consumption	
65	gal/hr all engines
780	GAL / day
243	MGAL / year

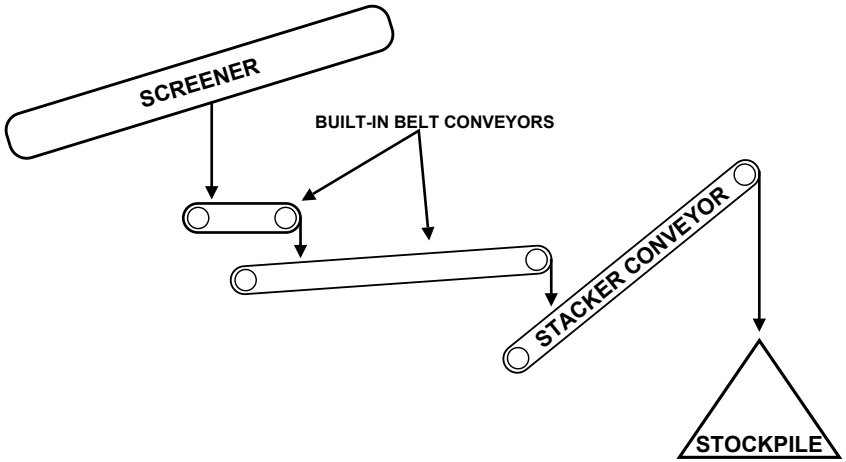
GREENHOUSE GASES

AP-42 emission factor units→	**lb/hp-hr**	**lb/hr**	**lbs/day**	**tons/year**
CO_2	1.15	403	4,830	753

*** grams/hr = (EF * $BHP_{_Crusher1}$) + (EF * $BHP_{_Crusher2}$) + (EF*$BHP_{_Screener}$) + (EF*$BHP_{_Stacker}$)**

EXCALIBUR SITE SERVICES, LLC.





1500 Aspen Street, Baltimore, MD 21226

EXCALIBUR SITE SERVICES, LLC

SATELLITE IMAGE WITH CRUSHERS OVERLAID

5501 ASPEN STREET, BALTIMORE, MD

BALTIMORE CITY
DEPARTMENT OF HOUSING &
COMMUNITY DEVELOPMENT

June 03, 2021

Excalibur Site Services, LLC
c/o Larry Claytor
PO Box 1409
Pasadena, MD 21123

Re: 5301 Andard Street

Dear Mr. Claytor:

This is in response to your request for zoning verification concerning the above referenced property.

Please be advised that the subject property is located in an MI Maritime Industrial District. The property is also located in The Chesapeake Bay Critical Area and Regulated Floodplain. The MI Maritime Industrial Zoning District is intended to ensure the preservation of deep-water frontage of the Port of Baltimore for maritime industrial uses by delineating an area where maritime shipping and maritime industrial uses can be conducted without the intrusion of non-industrial uses and where investment in maritime infrastructure is encouraged. The nature of these activities may result in external effects, such as smoke, noise, glare, or vibration, and typically include outdoor storage and related outdoor activities. Your proposal to process building and road construction materials through the crushing and screening process for shipment via barge to out of state locations would be permitted, subject to compliance with all applicable zoning regulations and the applicable flood plain and critical area requirements.

Our records reflect no current or pending zoning violations with respect to this property.

Should you have any additional questions regarding this matter, please contact the Zoning Office at 410-396-4126.

Sincerely,

Geoffrey Veale
Zoning Administrator