



Part D - South Coast AQMD BACT Determination

Source Type: **Minor**

Application No.: **622272 and 628304**

Equipment Category: **Asphalt Oil Blending**

Equipment Subcategory: **Crumb Rubber Blending**

Date: **XX.XX.2023**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: -		B. MODEL: -	
C. DESCRIPTION: Asphaltic concrete is produced using a mixture of asphalt oil and crumb rubber, in lieu of only asphalt oil. The crumb rubber/asphalt blending system includes a mixing tank and a secondary mixing/storage tank which are vented to air pollution control equipment. The air pollution control equipment includes a condenser, steel wool, and Electrostatic precipitator (ESP) for each tank.			
D. FUNCTION: Trion T1300 ESP vents mixing tank and Trion T2600 ESP vents secondary mixing/storage tank to a common carbon adsorber to reduce VOC emissions.			
E. SIZE/DIMENSIONS/CAPACITY: -			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: N/A			
G. BURNER INFORMATION: N/A			
TYPE		INDIVIDUAL HEAT INPUT	NUMBER
Enter additional burner types, as needed, add extra rows		Rated heat input of single burner, in btu/hr	Number of burners
H. PRIMARY FUEL: -		I. OTHER FUEL: -	
J. OPERATING SCHEDULE: 8 HRS/DAY 6 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: The summary of costs evaluation report is attached.			
L. EQUIPMENT INFORMATION COMMENTS: -			

2. COMPANY INFORMATION

A. COMPANY: All American Asphalt		B. FAC ID: 82207	
C. ADDRESS: 10671 Jeffrey Rd. CITY: Irvine STATE: CA ZIP: 92602		D. NAICS CODE: 324121	
E. CONTACT PERSON: Danny Stinson		F. TITLE: Plant Manager	
G. PHONE NO.: (951) 736-7600		H. EMAIL: DSTINSON@ALLAMERICANASPHALT.COM	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Todd Iwata	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 8/27/21 P/O NO.: G66229 PO ISSUANCE DATE: 8/27/2021	
E. START-UP DATE: 2/18/2021	
F. OPERATIONAL TIME: + 2 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: .						
	VOC	NOX	SOX	CO	PM OR PM ₁₀	INORGANIC
BACT Limit						
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: -						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: -						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Event Corporation	B. MODEL: EC-2000		
C. DESCRIPTION: Carbon adsorber with two canisters in series were installed to control VOC emissions and odor from two electrostatic precipitators which in turn control emissions from one mixing tank and a secondary/storage tank of crumb rubber/asphalt oil blending system.			
D. SIZE/DIMENSIONS/CAPACITY: Each canister has 2000 pounds of activated carbon, 3'-9.5" diameter x 7'-10" height			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO.: 628304 PC ISSUANCE DATE: Same PO NO.: Same PO ISSUANCE DATE: Same			
F. REQUIRED CONTROL EFFICIENCIES:			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	__90__%	__%	__%
NO _x	__%	__%	__%
SO _x	__%	__%	__%
CO	__%	__%	__%
PM	__%	__%	__%
PM ₁₀	__%	__%	__%
INORGANIC	__%	__%	__%
G. CONTROL TECHNOLOGY COMMENTS: -			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source test		
B. DATE(S) OF SOURCE TEST: March 17-19, 2021		
C. COLLECTION EFFICIENCY METHOD: -		
D. COLLECTION EFFICIENCY PARAMETERS: -		
E. SOURCE TEST/PERFORMANCE DATA:		
	Inlet Concentration (ppmvd)	Outlet Concentration (ppmvd)
Total gaseous non-Methane/Ethane organics	591.0	11.2
Sulfur	3.9	0.05
	Inlet Emission Rate (lb/hr)	Outlet Emission Rate (lb/hr)
Total gaseous non-Methane/Ethane organics	0.97	0.02
Sulfur	0.014	Lower than detection limit

F. TEST OPERATING PARAMETERS AND CONDITIONS: Permit Condition 7) The operator shall replace the carbon in the primary canister with either (1) fresh carbon or (2) redirect the total incoming flow from the electrostatic precipitators to the secondary canister and replace the carbon in the primary canister and place it in the secondary position after the control efficiency of the primary canister is less than 90%. The control efficiency shall be determined using the Total Organic Compound (TOC) concentrations measured on the same day pursuant to condition no. 6 and the following equation: $\text{Control efficiency} = (1 - \text{Outlet Concentration of Primary Canister} / \text{Inlet Concentration of Primary Canister}) * 100$ Permit Condition 8) The operator shall replace the carbon in the secondary canister before the control efficiency of the secondary canister is less than 90% Permit Condition 9) The operator shall complete total carbon replacement within 7 business days after the control efficiency of the primary canister is less than 90% Permit Condition 10) Spent carbon removed from the system shall be stored in closed canisters prior to disposal or regeneration. If disposed, disposal shall be in accordance with applicable hazardous materials rules and regulations.
G. TEST METHODS (SPECIFY AGENCY): South Coast AQMD method 25.3
H. MONITORING AND TESTING REQUIREMENTS: Permit Condition 6) The operator shall measure the Total Organic Compound (TOC) concentration at the inlet and outlet of the primary and secondary canisters using a photoionization or any other South Coast AQMD-approved organic vapor analyzer calibrated in parts per million by volume (ppmv) as hexane. If another calibrating agent is used, it shall be correlated to and expressed as hexane. The analyzer shall meet EPA Method 21 requirements. Calibration of the analyzer shall be performed prior to each measuring day. Measurements shall be made at least once every 14 days the crumb rubber/asphalt oil blending system is operated.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: -

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 286100	B. CCAT: 1B	C. APPLICATION TYPE CODE: -	
D. RECLAIM FAC? YES ☐ NO ☒	E. TITLE V FAC: YES ☐ NO ☒	F. SOURCE TEST ID(S): PR21000	
G. SCAQMD SOURCE SPECIFIC RULES:			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: -	H2. MICR DATE: -	H3. CANCER BURDEN: -	H4. CB DATE: -
H5. HIA: -	H6. HIA DATE: -	H7. HIC: -	H8. HIC DATE: -

Crumb Rubber/Asphalt Blending Cost Effectiveness Analysis

Control Technology: Carbon Adsorber (CA) Unit

Operation Schedule: **10** hr/day **261** days/yr
CA Unit **20** years
Interest rate: **4** %

Capital Cost

Equipment (Carbon Adsorber Unit)	\$	54,989
Direct & Indirect Installation	\$	71,655
Total Capital	\$	126,644

Operating Cost

Direct & Indirect	\$	0.0
Total Average Annual	\$	44,038

PVF

Present Value of Capital Costs	\$	13.59
Present Value of Annual Costs (20 years @ 4%)	\$	126,644
Total 20-Year Capital Cost	\$	598,491
	\$	725,135

Uncontrolled VOC (Inlet) Emissions, R1 (lb/day): 9.70
VOC Emissions reduction with 90% efficiency (lbs/day): 8.7
VOC Emissions reduction (lbs/year) 2275.9
VOC Emissions reduction (tons/year) 1.14
VOC Emissions reduction (tons/20-year life) 22.76

Cost per ton of VOC reduced	\$	31,861
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MSBACT maximum cost effectiveness VOC (\$/ton)

INCREMENTAL 2nd Qtr 2021

COST EFFECTIVE

\$ 34,227

AVERAGE 2nd Qtr 2021

COST EFFECTIVE

Notes:

- The carbon adsorber unit is equipped with two carbon canisters with minimum overall control efficiency of 90%.
- Equipment life for carbon adsorbers assumed 20 years based on the EPA report:
https://www.epa.gov/sites/default/files/2018-10/documents/final_carbonadsorberschapter_7thedition.pdf
- Maximum allowed cost effectiveness was based on VOC Average/Incremental value in Table 5, Part C of the 2021 BACT Guidelines.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

XX-XX-2023 Rev 0

Equipment or Process: Crumb Rubber/Asphalt Oil Blending

Rating/Size	Criteria Pollutants				
	VOC	NOx	SOx	CO	PM ₁₀
All	Carbon Adsorber with 90% Control Efficiency (xx/xx/2023)				

* Means those facilities that are not major polluting facilities as defined by Rule 1302 – Definitions

BACT Guidelines - Part D

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Crumb Rubber/Asphalt Oil Blending