



Louisville Metro Air Pollution Control District
 701 West Ormsby Avenue, Suite 303
 Louisville, Kentucky 40203-3137



07 June 2016

Federally Enforceable District Origin Operating Permit Statement of Basis

Owner: Louisville Paving Company, Inc.
Source: Avoca Asphalt Plant

Plant Location: 12613 Avoca Road (13400 Old Henry Road), Louisville, Kentucky 40223

Date Application Received: 21 February 2006
 02 September 2008
 24 November 2010
 04 January 2012

Date of Draft Permit: 07 June 2016

District Engineer: Elise Venard

Permit No: O-0290-16-F

Plant ID: 0290 **SIC Code:** 2951

NAICS: 324121

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO₂), carbon monoxide (CO), 1 hr and 8 hr ozone (O₃), and particulate matter less than 10 microns (PM₁₀); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns (PM_{2.5}), unclassifiable for the 2012 standard for particulate matter less than 2.5 microns (PM_{2.5}) and partial non-attainment area for sulfur dioxide (SO₂).

Application Type/Permit Activity:

- Initial Issuance
- Permit Revision
 - Administrative
 - Minor
 - Significant
- Permit Renewal

Compliance Summary:

- Compliance certification signed
- Source is out of compliance
- Compliance schedule included
- Source is operating in compliance

I. Source Information

1. **Product Description:** Louisville Paving Company, Inc. is a hot mix asphalt production facility, consisting of stockpiles of virgin and recycled aggregates, liquid storage tanks, and a drum mix batch HMA plant.
2. **Process Description:** Raw materials are delivered to and stored onsite awaiting production. The raw materials are then pre-processed to assure proper sizing and content for the end product. After pre-processing the aggregate and liquid from the storage tanks are mixed together in the drum mixer to produce hot mix asphalt. The HMA is then temporarily stored when waiting for transit trucks and it is transported to offsite delivery locations.
3. **Site Determination:** There are no other facilities that are contiguous or adjacent to this facility
4. **Emission Unit Summary:**

Emission Unit	Equipment Description
Plant-wide	Plant-wide requirements
U1	Virgin and recycled aggregate stockpiles
U2	Storage tanks for liquid asphaltic cement
U3	Recycled asphalt processing equipment
U4	Hot mix asphalt processing and production equipment

5. **Fugitive Sources:** The fugitive sources identified by the source are uncontrolled portions of the RAP and HMA processing units.

6. **Permit Revisions:**

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	0195-01-F	10/16/2001	07/01/2001	Initial	Entire Permit	Initial Permit Issuance
Rev. 1	N/A	10/16/2001	NA	Administrative	Page 1	Name change with no change in ownership
N/A	O-0290-16-F	Xx/xx/xxxx	06/07/2016	Renewal	Entire Permit	Permit renewal; Incorporation of name change, construction permits and Dust Control Plan parameters.

7. Construction Permit History:

Permit No.	Issue Date	Description
661-07-C	12/31/2008	RAP (Recycled Asphalt Product) operation including: one aggregate stockpile, two processed stockpiles, two receiving hoppers, one crusher with hopper, two aggregate sorting screens, and six (6) conveyors. Equipped with wet suppression system to control dust emissions.
56-10-C	07/09/2010	HMA (Hot Mix Asphalt) operation including: one aggregate stockpile, one counterflow drum mixer with burner, one transfer hot oil heater with tank, a cyclone precipitator with miner filler silo and baghouse, seven receiving hoppers, five conveyors, four drag-slat conveyors, one aggregate sorting screen, four product storage silos, one loadout station

8. Emission Summary:

Pollutant	District Calculated Actual Emissions (tn/yr) 2014 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	24.3	Yes
NO _x	4.77	Yes
SO ₂	0.62	No
PM ₁₀	2.26	Yes
VOC	8.87	Yes
Total HAPs	0.93	Yes
Single HAP (Formaldehyde)	0.57	No

9. Applicable Requirements:

PSD 40 CFR 60 SIP 40 CFR 63
 NSR 40 CFR 61 District-Origin Other

10. Referenced MACT Federal Regulations: The source has no future MACT requirements.

11. Referenced non-MACT Federal Regulations: Federal regulations 40 CFR Part 60, Subpart I "Standards of Performance for Hot Mix Asphalt Plants" apply to this asphalt production facility

II. Regulatory Analysis

1. **Acid Rain Requirements:** Louisville Paving Company, Inc. is not subject to the Acid Rain Program.
2. **Stratospheric Ozone Protection Requirements:** Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Louisville Paving Company, Inc. does not manufacture, sell, or distribute any of the listed chemicals.
3. **Prevention of Accidental Releases 112(r):** Louisville Paving Company, Inc. does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.
4. **40 CFR Part 64 Applicability Determination:** Louisville Paving Company, Inc. is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring for Major Stationary Sources*.
5. **Basis of Regulation Applicability**

- a. **Plant-wide**

Louisville Paving Company, Inc. is a potential major source for the pollutant PM₁₀, CO, NO_x, VOC, and total HAP. Regulation 2.17 – *Federally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutant PM₁₀ < 50 ton/yr, CO <50 ton/yr, NO_x <50 ton/yr, VOC <50 ton/yr, and total HAPs < 25 ton/yr, to be a FEDOOP source. The source is not major for Greenhouse Gases. Additionally, the source requested plant-wide limit of <50 ton/yr for PM.

Louisville Paving Company submitted a dust control plan in accordance with District regulation 1.14 and the plan is incorporated in the FEDOOP permit with adequate monitoring, record keeping, and reporting.

Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establishes requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

Louisville Paving Company submitted the TAC Environmental Acceptability Demonstration to the District in September 2008. SCREEN3 air dispersion modeling was performed for each emission unit that has non-de Minimis TAC emissions. Compliance with the STAR EA Goals was demonstrated in the revised EA Demonstration submitted in April 2009. The District reviewed the EA Demonstrations submitted by the source. The following table demonstrates that the carcinogen risk and non-carcinogen risk values comply with the STAR EA goals required in Regulation 5.21.

Plant-wide Sum	All new P/PE	
Industrial Total R _C	17.72	< 38
Non-Ind. Total R _C	0.23	< 3.8
Industrial Total R _{NC} (max)	0.27	< 3.0
Non-Ind. Total R _{NC} (max)	0.003	< 1.0

TAC	CAS #	Industrial		Non-Ind.		EA Demo
		R _C	R _{NC}	R _C	R _{NC}	
Arsenic	7440-38-2	0.54	0.004	0.007	5.29E-05	Meet
Benzene	71-42-2	0.62	0.003	0.008	3.43E-05	Meet
Formaldehyde	50-00-0	8.35	0.214	0.107	0.002743	Meet
Nickel	7440-02-0	3.57	0.272	0.046	0.003475	Meet
Naphthalene	91-20-3	4.64	0.045	0.059	0.000574	Meet
DPM		< 10.0	< 3.0	< 1.0	< 1.0	

Regulation 2.17, section 5.2, requires monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 – Aggregate Stockpiles**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E-1: Virgin aggregate stockpiles	39000 cf	NA	2.17 7.08	Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit. The District shall establish requirements and specific conditions that limit source PTE to below Title V standards. Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
R-1: Virgin RAP stockpile	52000 cf	NA		
R-10: Processed RAP stockpile #1	52000 cf	NA		
R-14: Processed RAP stockpile #2	52000 cf	NA		

ii. **Standards/Operating Limits**

1) **PM/PM₁₀**

- (a) The emission standard for PM at each emission point with a process throughput greater than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:
PM lb/hr limit = 17.31 (process weight tn/hr)^{0.16}.
- (b) The District has determined that the stockpiles under standard conditions and stated production limits cannot exceed hourly Regulation 7.08 PM lb/hr limits uncontrolled.

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.

c. **Emission Unit U2 – Storage Tanks**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
T-1: Asphalt tank #1	25000 gallon	5/2006	2.17 7.12	Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit. The District shall establish requirements and specific conditions that limit source PTE to below Title V standards.
T-2: Asphalt tank #2	22000 gallon	5/2006		
T-3: Asphalt tank #3	22000 gallon	5/2006		
T-4: No. 4 fuel oil tank	15000 gallon	5/2006	2.17 7.12	Regulation 7.12 establishes the requirements for storage tanks with a capacity greater than 250 gallons constructed after April 19, 1972
T-5: Asphalt additive tank	7500 gallon	5/2006		
T-6: Hot oil tank with heater/burner	50 gallon/ 2 MMBtu/hr	5/2006	2.17	

ii. **Standards/Operating Limits**

1) **SO₂**

(a) This 2 MMBtu heater/burner is not subject to 7.06 because it is not an indirect heat exchanger.

2) **VOC**

(a) Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

(b) The tanks are not subject 40 CFR 60, Subpart Kb because the vapor pressure is less than the required 1.5 kPa.

d. **Emission Unit U3 – RAP Operation**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E-9: RAP bin #1	500 ton/hr	2015	2.17	Regulation 2.17 applies to any stationary source, or one or

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E-10: RAP bin #2	500 ton/hr	2015	7.08	more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit. The District shall establish requirements and specific conditions that limit source PTE to below Title V standards. Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
R-3: RAP bin #3	500 ton/hr	2000		
R-12: RAP conveyor #1	300 ton/hr	2000		
R-7: RAP conveyor #2	300 ton/hr	2000		
R-5: RAP conveyor #3	300 ton/hr	2000		
R-8: RAP conveyor #4	300 ton/hr	2000		
R-9: RAP conveyor #5	300 ton/hr	2000		
R-13: RAP conveyor #6	300 ton/hr	2000		
E-12: RAP screen #1	300 ton/hr	5/2006		
R-6: RAP screen #2	300 ton/hr	2000		
R-4: RAP crusher	300 ton/hr	2000		

ii. **Standards/Operating Limits**

1) **PM/PM₁₀/Opacity**

- (a) The District has determined that the Recycled Asphalt Product (RAP) crusher is not subject to 40 CFR Part 60, OOO. "Nonmetallic mineral" means any of the minerals or any mixture of which the majority is any of the minerals listed in section 60.671(a) to (r) of Subject OOO. Generally, both concrete and asphaltic concrete are composed mostly of minerals covered in section 60.671. Given the RAP crusher will reduce the material to one-half inch in size or larger, the District has determined that the RAP crusher does not meet the definition of crushing or grinding as defined in Subpart OOO. (Permit 661-07-C)
- (b) The emission standard for PM at each emission point with a process throughput greater than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

PM lb/hr limit = 17.31 (process weight tn/hr)^{0.16}

- (c) The potential uncontrolled hourly PM emissions for RAP process equipment (E-9, E-10, R-3, R-12, R-7, R-5, R-8, R-9, R-13, E-12, R-6, R-4) cannot exceed the lb/hr limits (combined) of Regulation 7.08. (Permit 661-07-C)

e. **Emission Unit U4 – HMA Operation**

i. **Equipment:**

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E-3(a): Aggregate bin #1	500 ton/hr	5/2006	2.17, 7.08	Regulation 2.17 applies to any stationary source, or one or more processes or process equipment at a stationary source, for which the owner or operator voluntarily applies for a federally enforceable District origin operating permit. The District shall establish requirements and specific conditions that limit source PTE to below Title V standards.
E-3(b): Aggregate bin #2	500 ton/hr	5/2006		
E-3(c): Aggregate bin #3	500 ton/hr	5/2006		
E-3(d): Aggregate bin #4	500 ton/hr	5/2006		
E-3(e): Aggregate bin #5	500 ton/hr	5/2006		
E-3(f): Aggregate bin #6	500 ton/hr	5/2006		Regulation 7.08 establishes the requirements for PM emissions from new processes that commence construction after September 1, 1976.
E-3(g): Aggregate bin #7	500 ton/hr	5/2006		
E-4: Aggregate conveyor #1	500 ton/hr	5/2006		Regulation 7.09 establishes the Standard of Performance for New Process Gas Streams for processes that commence construction after April 19, 1972.
E-7: Aggregate conveyor #2	500 ton/hr	5/2006		
E-8: Aggregate conveyor #3	500 ton/hr	5/2006		
E-13: Aggregate conveyor #4	500 ton/hr	5/2006		Regulation 7.11 establishes the Standard of Performance for New Asphalt Paving Operations for processes that commence construction after April 1, 1980.
E-11: Aggregate conveyor #5	500 ton/hr	5/2006		
E-15: Drag slat conveyor	500 ton/hr	5/2006		Regulation 40 CFR 60 Subpart I establishes the Standards of Performance Hot Mix Asphalt Facilities for Which Construction, Reconstruction, or Modification Commenced after June 11, 1973.
E-16: Silo drag slat conveyor #1	500 ton/hr	5/2006		
E-17: Silo drag slat conveyor #2	500 ton/hr	5/2006		
E-18: Silo drag slat conveyor #3	500 ton/hr	5/2006		

P/PE	Capacity	Install Date	Applicable Regulation	Basis for Applicability
E-5: Aggregate screen	300 ton/hr	5/2006		
E-14: Counterflow drum mixer/burner	500 ton/hr	3/2010	2.17, 5.00, 5.01, 5.14, 5.20, 5.21, 5.22, 5.23, 7.09, 7.11, 40 CFR Part 60 Subpart I	
E-19: HMA silo #1	500 ton/hr	5/2006	2.17, 7.08	
E-20: HMA silo #2	500 ton/hr	5/2006		
E-21: HMA silo #3	500 ton/hr	5/2006		
E-22: HMA silo #4	500 ton/hr	5/2006		
E-23: Load-out station	500 ton/hr	5/2006		

ii. **Standards/Operating Limits**

1) **PM/PM₁₀**

- (a) The emission standard for PM at each emission point with a process throughput greater than 30 tn/hr is determined in accordance with Regulation 7.08, section 3.1.2 as follows:

$$\text{PM lb/hr limit} = 17.31 (\text{process weight tn/hr})^{0.16}$$
- (b) The listed equipment (E-3, E-4, E-7, E-8, E-13, E-11, E-15, E-16, E-17, E-18, E-5, and E-19 through E-23) cannot individually exceed the stated Regulation 7.08 PM lb/hr standard. Emission point E-14, Drum Mixer, needs to be controlled at all times to meet the Regulation 7.08 PM lb/hr standard.
- (c) In order for the rotary dryer to meet the standards in Regulation 7.08, section 3.1.2, the owner or operator shall operate and maintain the associated control device at all times the equipment is in operation, including periods of startup, shutdown, and malfunction.
- (d) Regulation 7.11, section 3.1.1 sets the particulate matter standard for performance for asphalt paving operations operating on and after April 1980 and applies to the Drum mixer (E-14).
- (e) Federal Regulation 40 CFR Part 60, Subpart I establishes the particulate matter standard for HMA facilities and applies to the Drum mixer (E-14).

2) **Opacity**

- (a) Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%, for processes that commenced construction after September 1, 1976.
- (b) Regulation 7.11, section 3.1.2 sets the opacity standard for performance for asphalt paving operations operating on and after April 1980.
- (c) Federal Regulation 40 CFR Part 60, Subpart I establishes the particulate matter standard for HMA facilities and applies to the Drum mixer (E-14).

3) **CO**

- (a) Regulation 7.09, section 5.1 sets the carbon monoxide emission standard for processes using gas streams built on or after April 1972.
- (b) The CO emissions from the process are created by the combustion of fuel oil or natural gas to generate heat required for removing moisture from aggregate and heating the aggregate for the production of hot mix asphalt. The nominal flame temperature of greater than 2,000 °F exceeds the 1,300 °F temperature requirement of Regulation 7.09, Section 5.1. (Permit 56-10-C)

4) **NO_x**

- (a) Regulation 7.08, section 4.1 establishes a nitrogen oxide standard of less than 300 ppm, for processes that commenced construction after September 1, 1976.
- (b) Manufacturer's data states worst case NO_x emissions using #2 fuel oil at less than 170 ppm, corrected to 3% O₂ dry, therefore the Regulation 7.08 NO_x standard cannot be exceeded.

5) **VOC**

- (a) Regulation 7.11, section 4 sets the cutback asphalts use restrictions for asphalt paving operations operating on and after April 1980.

6) **SO₂**

- (a) Regulation 7.09, section 4 establishes a sulfur dioxide standard of less than 29.63 grains per 100 dscf for processes that commenced construction after September 1, 1976.
- (b) The synthetic limit reduces the emissions of criteria pollutant SO₂ to less than forty (40) tons during any twelve (12) consecutive month period for Regulation 7.09 SO₂ emission standard compliance. (Permit 56-10-C)
- (c) Source provided laboratory results for #4 fuel oil, were received on Sept. 2, 2008, showing sulfur content of 0.4169% to demonstrate compliance with the SO₂ standard in construction permit Permit 56-10-C.

7) **TAC**

- (a) Regulation 5.21, section 4.2 and section 4.3 sets the environmental acceptability standards for permitted stationary sources.

- (i) To demonstrate compliance with these sections, this unit has TAC emission standards since its EA Demonstration was based on controlled PTE. If the controlled PTE for the TAC is less than de minimis level, use De Minimis as limit. If the controlled PTE for the TAC is greater than de minimis level, modeling results were used to calculate risk value to compare to the EA Goals and controlled PTE is used as limit.
 - (ii) To demonstrate compliance with these sections, the TAC emission limits determined by de minimis values shall be updated each time when the District revises the BAC/de minimis values for these TACs. The current de minimis values per TAC list revised on 10/14/2013: Antimony (0.76 lb/hr, 672 lb/yr), Beryllium (0.00023 lb/hr, 0.2 lb/yr), Cadmium (0.0003 lb/hr, 0.27 lb/yr), Chromium (0.000045 lb/hr, 0.04 lb/yr), Cobalt (0.00022 lb/hr, 0.19 lb/yr), Copper (0.04 lb/hr, 43.8 lb/yr), Lead (0.043 lb/hr, 38.4 lb/yr), Manganese (0.027 lb/hr, 24.0 lb/yr), Mercury (0.16 lb/hr, 144 lb/yr), Selenium (10.8 lb/hr, 9600 lb/yr).
- iii. **Monitoring and Recordkeeping**
- 1) **PM/PM₁₀**
 - (a) Federal Regulation 40 CFR Part 60, Subpart I establishes the monitoring and recordkeeping requirements for HMA facilities.

- (i) To demonstrate compliance with the Federal regulation, a Method 5 stack test was performed on August 20 and 21, 2010 (DM#: 11432). The Method 5 test showed that the baghouse was operating within the limit of 0.040 grains/dscf and had an average emission rate of 0.0046 grains PM/dscf (1.28 lb PM/hr). During the test the average baghouse flowrate was 50986 cf/min (3059160 cf/hr). The limiting capacity of the Drum mixer (E-14) is 500 tph, therefore, the emission rate of 1.28 lb/hr / 500 ton/hr, can be expressed as 0.00256 lb/ton of HMA produced.

2) **Opacity**

- (a) Federal Regulation 40 CFR Part 60, Subpart I establishes the monitoring and recordkeeping requirements for HMA facilities.

iv. **Reporting**

1) **PM/PM₁₀**

- (a) Federal Regulation 40 CFR Part 60, Subpart I establishes the reporting requirements for HMA facilities.

2) **Opacity**

- (a) Federal Regulation 40 CFR Part 60, Subpart I establishes the reporting requirements for HMA facilities.

v. **Testing**

Regulation 2.17, section 5.2, requires stack testing as necessary to assure ongoing compliance with the terms and conditions of the permit. Plant-wide the owner or operator shall retest control device (C-2) within ten (10) years since the most recent District accepted performance test or within 180 days after the effective date of the permit if no previous test has been performed, unless the District requires a different time schedule. For equipment which has been tested but not within ten years prior to the effective date of this permit the Company may submit within 90 days of the effective date of this permit, contingent on approval by the District, a schedule

which shall at a minimum propose testing for all affected equipment within this permit cycle. Thereafter the Company shall retest each affected device at least once every 10 years. Devices of adequately similar design and filter media may be represented by a common performance test contingent upon review and approval by the District of the testing protocol. In lieu of the control efficiency testing, unless required by a Federal Regulation, the owner or operator may submit a signature guarantee from the control device manufacture stating the control device efficiency

1) **PM/PM₁₀**

- (a) The owner or operator shall perform an EPA Reference Method 5 PM performance test on the inlet and outlet of the control device (C-2) or emission point to determine the emission rate and control efficiency. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations.
- (b) The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.

III. Other Requirements

1. **Temporary Sources:** The source did not request to operate any temporary facilities.
2. **Short Term Activities:** The source did not report any short term activities.
3. **Emissions Trading:** N/A
4. **Operational Flexibility:** The source did not request any operation flexibility.
5. **Compliance History:**

Incid. #	Date	Regulation Violated	Settlement
2450	4/17/2000	Regulation 1.06	Agreement with fine
2972	6/10/2002	Regulation 2.17 compliance w/ permit	Agreement with fine
3172	7/30/2002	Regulation 2.17 compliance w/ permit	Agreement with fine

Incid. #	Date	Regulation Violated	Settlement
3640	9/16/2003	Regulation 2.17 compliance w/ permit	Agreement with fine
3843	5/28/2004	Regulation 2.17 compliance w/ permit	Agreement with fine

6. Calculation Methodology or Other Approved Method:

a. **PM₁₀**

- i. The monthly PM₁₀ emissions can be determined from aggregate processing based on aggregate throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on EPA-450/3-88-008 “Control of Open Fugitive Sources” p. 4/17; AP-42, Chapters 13.2.1 “Paved Roads”, 13.2.4 “Aggregate Handling and Storage Piles”, Chapter 11 Table 11.19.2-2 “Emission Factors for Crushed Stone Processing Operations”, and Table 11.12-2 “Emission Factors for Concrete Batching”.

Emission Source	Uncontrolled PM ₁₀	Controlled PM ₁₀
Aggregate Storage Pile*	0.00082 lb/ton	0.00041 lb/ton
Tertiary Crushing	0.0024 lb/ton	0.00054 lb/ton
Screening	0.0087 lb/ton	0.00074 lb/ton
Aggregate transfer	0.0033 lb/ton	0.0017
Sand transfer	0.00099 lb/ton	0.000495

- This emission factor includes loading, unloading, transport, and wind action on a sitting storage pile.

- ii. Using the above Emission Factor calculating the tons per month PM₁₀ emissions, for both controlled and uncontrolled conditions, is as follows:

$$E_{PM10} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{PM10} = controlled or uncontrolled PM₁₀ emissions (tons) during a month

X = the amount of aggregate throughput (tons) processed during a month

- iii. The monthly PM₁₀ emissions can be determined from the HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Table 11.1-3 “Particulate Matter Emission Factors for Drum Mix Hot Mix Asphalt Plants” and Table 11.1-14 “Predictive Emission Factor Equations for Load-Out and Silo Filling Operations”.

Emission Source	Uncontrolled PM ₁₀	Controlled PM ₁₀
Drum Mixer/Dryer	6.5 lb/ton	0.023 lb/ton
Silo filling	0.000585 lb/ton	0.000585 lb/ton
Plant load-out	0.000521 lb/ton	0.000521 lb/ton

- iv. Using the above Emission Factor calculating the tons per month PM₁₀ emissions, for both controlled and uncontrolled conditions, is as follows:

$$E_{PM10} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{PM10} = controlled or uncontrolled PM₁₀ emissions (tons) during a month

X = the amount of HMA (tons) produced during a month

- v. The insignificant activity PM₁₀ emissions can be determined from the Aggregate Storage Piles (E-1, R-1, R-10, and R-14) and Load-out Station (E-23) when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM₁₀ emissions as the monthly emissions. District approved PTE is 0.04 tons/month each for the Aggregate Storage Piles and 0.38 tons/month for the Load-out Station.

b. PM

- i. The monthly PM emissions can be determined from aggregate processing based on aggregate throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on EPA-450/3-88-008 “Control of Open Fugitive Sources” p. 4/17; AP-42, Chapters 13.2.1 “Paved Roads”, 13.2.4 “Aggregate Handling and Storage Piles”.

Emission Source	Uncontrolled PM	Controlled PM
Aggregate Storage Pile*	0.0017 lb/ton	0.00085

- This emission factor includes loading, unloading, transport, and wind action on a sitting storage pile.

- ii. Using the above Emission Factor calculating the tons per month PM emissions, for both controlled and uncontrolled conditions, is as

follows:

$$E_{PM} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{PM} = controlled or uncontrolled PM emissions (tons)
 X = the amount of material throughput (tons) processed

- iii. The insignificant activity PM emissions can be determined from the Aggregate Storage Piles (E-1, R-1, R-10, and R-14) when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM emissions as the monthly emissions. District approved PTE is 0.09 tons/month each for the Aggregate Storage Piles.
- iv. The monthly PM emissions can be determined from aggregate processing based on aggregate throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11, Table 11.19.2-2 “Emission Factors for Crushed Stone Processing Operations”, and Table 11.12-2 “Emission Factors for Concrete Batching”.

Emission Source	Uncontrolled PM	Controlled PM	E.F. Rating
Tertiary Crushing	0.0054 lb/ton	0.0012 lb/ton	E
Screening	0.025 lb/ton	0.0022 lb/ton	E
Aggregate transfer	0.0069 lb/ton	0.0035	D
Sand transfer	0.0021 lb/ton	0.0011	D

- v. Using the above Emission Factor calculating the tons per month PM emissions, for both controlled and uncontrolled conditions, is as follows:

$$E_{PM} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{PM} = controlled or uncontrolled PM emissions (tons) during a month
 X = the amount of material throughput (tons) processed during a month

- vi. The monthly PM emissions can be determined from HMA production based on product throughput and the emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Table 11.1-3 “Particulate Matter Emission Factors for Drum Mix Hot Mix Asphalt Plants”, and Table 11.1-14 “Predictive Emission Factor Equations for Load-Out and Silo Filling Operations”.

Emission Source	Uncontrolled PM	Controlled PM
Drum Mixer/Dryer	28 lb/ton	0.033 lb/ton
Silo filling	0.000585 lb/ton	0.000585 lb/ton
Plant load-out	0.000521 lb/ton	0.000521 lb/ton

- vii. Using the above Emission Factor calculating the tons per month PM emissions, for both controlled and uncontrolled conditions, is as follows:

$$E_{PM} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{PM} = controlled or uncontrolled PM emissions (tons) during a month
 X = the amount of HMA (tons) produced during a month

- viii. The insignificant activity PM emissions can be determined from the Load-out Station (E-23) when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential PM emissions as the monthly emissions. District approved PTE is 0.38 tons/month for the Load-out Station.

- ix. Subsequent compliance with the stack emissions limit can be demonstrated by calculating PM emissions using an emission factor derived from a valid stack test and the product throughput. $E_{PM} = (X)(EF)(BC)(7000 \text{ grains}/1 \text{ lb})(1 \text{ month}/720 \text{ hrs})$

Where: E_{PM} = controlled or uncontrolled PM stack emissions (grains/cf)

X = the amount of material HMA (Tons) produced during the month
 $EF = 0.00256 \text{ lb/ton HMA produced (controlled)}$
 $EF = 0.0128 \text{ lb/ton HMA produced (uncontrolled)}$
 $BC = 1 \text{ hr}/3059160 \text{ cf baghouse capacity}$

c. **CO**

- i. The monthly CO emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by

the District. Emission factors are based on AP-42, Chapter 11 Section 1 Table 11.1-7 “Emission Factors for CO, CO₂, NO_x, and SO₂ From Drum Mix Hot Mix Asphalt Plants”, and Table 11.1-14 “Predictive Emission Factor Equations for Load-Out and Silo Filling Operations”.

Emission Source	CO
Drum mixer	0.13 lb/ton
Silo filling	0.00118 lb/ton
Plant load-out	0.00134 lb/ton

- ii. Using the above Emission Factors calculating the tons per month CO emissions is as follows:

$$E_{CO} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{CO} = CO emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons), during a consecutive 12-month period

- iii. The insignificant activity CO emissions can be determined from the Load-out Station (E-23) when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential CO emissions as the monthly emissions. District approved PTE is 0.24 tons/month for the Load-out Station.

d. **NO_x**

- i. The monthly NO_x emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Section 1 Table 11.1-7 “Emission Factors for CO, CO₂, NO_x, and SO₂ from Drum Mix Hot Mix Asphalt Plants”.

Emission Source	NO _x
Drum mixer burning No. 2 fuel oil	0.055 lb/ton
Drum mixer burning natural gas	0.026 lb/ton

- ii. Using the above Emission Factors calculating the tons per month NO_x emissions is as follows:

$$E_{NOX} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{NOX} = NO_x emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons), during a consecutive 12-month period

e. **VOC**

- i. The monthly VOC emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Section 1 Table 11.1-8 “Emission Factors for TOC, CH₄, VOC, and HCL from Drum Mix Hot Mix Asphalt Plants”, and Table 11.1-14 “Predictive Emission Factor Equations for Load-Out and Silo Filling Operations”.

Emission Source	VOC
Drum mixer	0.032 lb/ton
Silo filling	0.01214 lb/ton
Plant load-out	0.004144 lb/ton

- ii. Using the above Emission Factors calculating the tons per month VOC emissions is as follows:

$$E_{VOC} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{VOC} = VOC emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons), during a consecutive 12-month period.

- iii. The insignificant activity VOC emissions can be determined from the liquid storage tanks and Load-out Station when totaling the monthly plant-wide emissions. Since the emissions are minor the owner or operator may use the potential VOC emissions as the monthly emissions. District approved PTE is 10.0 pound VOC/month/tank and 0.76 tons/month for the Load-out Station.

f. **SO₂**

- i. The monthly SO₂ emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Section 1 Table 11.1-7 “Emission Factors for CO, CO₂, NO_x, and SO₂ from Drum Mix Hot Mix Asphalt Plants”.

Emission Source	SO ₂
Drum mixer burning No. 2 fuel oil	0.011 lb/ton
Drum mixer burning natural gas	0.003 lb/ton

- ii. Using the above Emission Factors calculating the tons per month SO₂ emissions is as follows:

$$E_{SO_2} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{SO₂} = SO₂ emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons), during a consecutive 12-month period

g. HAP

- i. The monthly HAP emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Table 11.1-10 “Emission Factors For Organic Pollutant Emissions from Drum Mix Hot Mix Asphalt Plants”.

Emission Source	HAP
Drum mixer using No. 2 oil with fabric filter	0.0087 lb//ton
Drum mixer using Natural Gas with fabric	0.0053 lb/ton

- ii. Using the above Emission Factors calculating the tons per month HAP emissions is as follows:

$$E_{HAP} = (X)(EF \text{ lb/ton})(1 \text{ ton}/2000 \text{ lb.})$$

Where: E_{HAP} = HAP emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons), during a consecutive 12-month period

h. TAC

- i. The monthly TAC emissions can be determined from HMA production based on product throughput and emission factors stated in the Table below unless another method is approved in writing by the District. Emission factors are based on AP-42, Chapter 11 Table 11.1-12 “Emission Factors For Metal Emissions from Drum Mix Hot Mix Asphalt Plants”.

Emission Source	Pollutants	Emission Factors Unit	Uncontrolled Emission Factors	Controlled Emission Factors	Emission Factor Sources
E-18	Antimony	lb/ton	9.0E-6	1.8E-7	
	Arsenic	lb/ton	1.3x10-6	2.6E-8	

Emission Source	Pollutants	Emission Factors Unit	Uncontrolled Emission Factors	Controlled Emission Factors	Emission Factor Sources
	Cadmium	lb/ton	4.2E-6	8.4E-8	AP 42 Table 11.1-12
	Chromium	lb/ton	2.4E-5	5.0E-7	
	Cobalt	lb/ton	1.5E-5	3.0E-7	
	Copper	lb/ton	1.7E-4	3.5E-6	
	Lead (Pb)	lb/ton	5.4E-4	1.0E-5	
	Manganese	lb/ton	6.4E-4	1.2E-5	
	Nickel	lb/ton	1.3E-3	2.6E-5	
	Selenium	lb/ton	2.4E-6	4.8E-8	

- ii. Using the above Emission Factors calculating the tons per month TAC emissions, for both controlled and uncontrolled conditions, is as follows:

$$E_{TAC} = (X)(EF \text{ lb/ton})$$

Where: E_{TAC} = TAC emissions (tons) during a consecutive 12-month period

X = the amount of HMA produced (tons) during a consecutive 12-month period

7. Insignificant Activities

Equipment Description	Quantity	PTE (tpy) each	Regulation Basis
Open stockpile, virgin limestone & sand, height =13' width = 30' length = 100', 0.35 miles paved road (39000 ft ³ capacity)	1	PM ₁₀ =0.53 PM=1.13	Regulation 1.02
Open stockpile, virgin RAP, height =13' width = 30' length = 100', 0.35 miles paved road (52000 ft ³ capacity)	1	PM ₁₀ =0.53 PM=1.13	Regulation 1.02
Open stockpile, processed RAP, height =13' width = 30' length = 100', 0.35 miles paved road (52000 ft ³)	2	PM ₁₀ =0.53 PM=1.13	Regulation 1.02
Homemade, vertical, 25,000 gallon	1	VOC= 0.06	Regulation 1.02
Homemade, vertical, 22,000 gallon	2	VOC= 0.06	Regulation 1.02
UNK, vertical, 15,000 gallon	1	VOC= 0.06	Regulation 1.02
UNK, vertical, asphalt mix additive, 7,500 gallon	1	VOC= 0.06	Regulation 1.02

Equipment Description	Quantity	PTE (tpy) each	Regulation Basis
Gencor, horizontal, transfer oil tank with 2 MMBtu/hr burner, natural gas, 50-gallon *	1	PM ₁₀ =0.13 PM=0.13 VOC=0.036 NO _x =1.28 CO=0.077 SO ₂ =4.54	Regulation 1.02
Load-out station, 500 tph	1	PM ₁₀ =1.14 PM=1.14 VOC=2.27 CO=0.73	Regulation 1.02

▪ Emissions included as part of the Drum Mix emissions.

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.