



MAY 13 2013

Tom Ferrel
Vulcan Materials Company
11599 Old Friant Road
Fresno, CA 93730

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-8476
Project Number: C-1130861

Dear Mr. Ferrel:

Enclosed for your review and comment is the District's analysis of Vulcan Materials Company's application for an Authority to Construct for a new hot mix asphalt plant, at 3570 West Ashlan Ave in Fresno, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Thom Maslowski of Permit Services at (559) 230- 5906.

Sincerely,



David Warner
Director of Permit Services

DW:TM

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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Modesto, CA 95356-8718
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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Vulcan Materials Company for a new hot mix asphalt plant, at 3570 West Ashlan Ave in Fresno, CA.

The analysis of the regulatory basis for this proposed action, Project #C-1130861, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. For additional information, please contact the District at (559) 230-6000. Written comments on this project must be submitted by June 17, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

**San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
(Hot Mix Asphaltic Concrete Manufacturing Operation)**

Date: May 2, 2013

Facility Name: Vulcan Material Company
Mailing Address: 11599 Old Friant Road
Fresno, CA 93730

Contact Name: Tom Ferrell
Phone Number: (559) 978-2215

Consultant Name: Susana Perez
Phone Number: (562) 961-3494

Engineer: Thom Maslowski
Lead Engineer: Joven Refuerzo
Project Number: C-1130861
Permit Numbers: C-8476-1-1 & -2-1

Deemed Complete: March 29, 2013

I. Proposal:

Vulcan Materials Company. (hereinafter referred to Vulcan) is proposing to install a new drum hot mix asphalt (HMA) manufacturing plant to be operated at 3570 W. Ashlan Ave in Fresno, CA. The HMA manufacturing plan consists of aggregate, recycled asphalt pavement (RAP), recycled asphalt shingles (RAS), handling and storing (ATC C-8476-2-1), asphalt drum dryer/mixer vented to a baghouse and an asphalt loadout operation including storage silos all vented to a filter pack blue smoke control system (ATC C-8476-1-1). These ATCs cancel and supersede previously issued ATCs C-8476-1-0 & -2-0 since the facility is proposing a higher throughput than originally purposed.

See Appendix A for Draft ATCs.

II. Applicable Rules:

Rule 2010: Permits Required (12/17/92)
Rule 2201: New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410: Prevention of Significant Deterioration (6/16/11)
Rule 2520: Federally Mandated Operating Permits (6/21/01)
Rule 4101: Visible Emissions (2/17/05)
Rule 4102: Nuisance (12/17/92)
Rule 4201: Particulate Matter Concentration (12/17/92)
Rule 4202: Particulate Matter Emission Rate (12/17/92)
Rule 4301: Fuel Burning Equipment (12/17/92)

Rule 4309: Dryers, Dehydrators, and Ovens (12/15/05)
Rule 4641: Cutback, Slow Cure, Emulsified Asphalt, Paving and Maintenance
Operations (12/17/92)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700: Health Risk Assessment
CH&SC 42301.6: School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location:

The facility is located at 3570 West Ashlan Ave in Fresno, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description:

Vulcan is proposing to install and operate a hot mix asphaltic concrete plant. The proposed plant will produce asphaltic concrete, which is a mixture of aggregate, RAP/RAS, and liquid asphalt cement, which is heated and mixed in measured quantities to produce hot mix asphalt (HMA).

The basic HMA plant process involves removing oversize aggregate and RAP/RAS, removing moisture from the aggregate, heating the aggregate, heating the asphalt cement, mixing the aggregate, RAP/RAS, and liquid asphalt cement until the aggregate particles are coated uniformly with liquid asphalt cement. This project is for a drum mix HMA facility. In a drum mix operation aggregate is not only dried and heated within the drum, but also mixed with the asphalt cement. If rubberized asphalt concrete is required by their customers, rubberized liquid asphalt oil is also added in the drum dryer/mixer as a supplement to the liquid asphalt cement.

Aggregate from delivery trucks are unloaded at the facility at the drive-over grizzly and conveyed onto a radial stacker, which transports the aggregate to the appropriate storage piles. Aggregate from the storage piles is loaded into the appropriate cold feed hopper using front-end loaders. The aggregate cold feed system will utilize 6 cold feed hoppers to meter the required sized aggregate onto a conveyor belt, which transports the aggregate into a vibrating screen. The vibrating screen is utilized to remove oversized aggregate prior to conveying into the rotary drum dryer/mixer.

RAP/RAS is also received from delivery trucks which unloads and stores the material in open storage piles. RAP/RAS from the storage piles are loaded into the RAP feed system, which utilizes two feed hoppers to meter the required RAP onto a conveyor belt and drops the RAP/RAS into a vibrating screen. From the vibrating screen the sized RAP is conveyed into the rotary drum dryer/mixer.

The sized aggregate and RAP/RAS are dropped into the rotary drum and heated by a 125 MMBtu/hr natural gas fired burner. Heated liquid asphalt cement is pumped from the

storage tanks into the rotary drum mixer. The heated aggregate and RAP/RAS are mixed with liquid asphalt cement as it flows through the rotary drum dryer/mixer. The produced hot mixed asphalt concrete is dropped out the discharged chute onto an inclined drag conveyor, which transports the product into one of ten 300 ton truck loadout storage silos. The liquid asphalt cement is received and stored in aboveground storage tanks. The storage tanks are heated with an exempt 1.9 MMBtu/hr indirect natural gas burner.⁽¹⁾

In the proposed Astec double barrel drum dryer, natural gas will be used to fire a 125 MMBtu/hr low-NOx burner used to dry and heat the aggregate. The burner generates NOx, VOC, CO, SOx and PM₁₀ emissions. The emissions from the proposed Astec drum mixer are served by a Astec Model RBH-96-18W baghouse.

The hot mix asphalt concrete will be transported from the rotary drum dryer/mixer into the product storage silo by an incline drag conveyor. Ten 300 ton product storage silos will be located over two truck scales for truck loading. The produced hot mix asphalt concrete is discharged from the storage silos through "clam style" gates into awaiting transport trucks for delivery to paving sites.

VOC, CO, PM₁₀ emissions are generated from the storage and loadout operations. The emissions will be controlled by venting the silo and truck loadout to a Blue Smoke Control model 6S24C filter pack blue smoke control system for emissions control.

Operating Schedule & Process Rate:

The equipment is proposed to operate 24 hours per day at a maximum hot mix asphalt concrete production rate of 6,000 tons/day and 500,000 tons/year.

V. Equipment Listing:

C-8476-1-1 HOT MIX ASPHALTIC CONCRETE MANUFACTURING PLANT CONSISTING OF THE FOLLOWING: AGGREGATE RECEIVING AND STORAGE; SIX COLD FEED AGGREGATE BINS EACH WITH A FEED BELT CONVEYOR; THREE COLLECTING CONVEYOR FEEDING A VIBRATING SCREEN WITH A DRUM MIXER FEED CONVEYOR; ONE 125 MMBTU/HR NATURAL GAS FIRED ASTEC MODEL RDB-10847 DRUM DRYER/MIXER WITH A LOW-NOX BURNER VENTED TO A ASTEC MODEL RBH-96-18W BAGHOUSE; ONE ENCLOSED DRAG SLAT CONVEYOR; FIVE 300-TON ASPHALT CONCRETE STORAGE SILO WITH A TRUCK LOADOUT. THE ASPHALT CONCRETE STORAGE SILO AND TRUCK LOADOUT ARE VENTED TO A BLUE SMOKE FILTER PACK

C-8476-2-1 RECLAIM ASPHALT PAVEMENT (RAP) AND RECYCLED ASPHALT SHINGLES (RAS) RECEIVING AND STORAGE; TWO RAP BINS EACH WITH A FEED BELT CONVEYOR; ONE AGGREGATE COLLECTING CONVEYOR FEEDING A VIBRATING SCREEN SERVED BY A

¹ Since the process heater is indirect fired and has a firing rate less than 5 MMBtu/hr, it is exempt from permits as per District Rule 2020, section 6.1.1.

BAGHOUSE; AND A DRUM MIXER FEED CONVEYOR; AND A PERMIT
EXEMPT OIL HEATER (NATURAL GAS FIRED, 5 MMBTU/HR OR LESS)

VI. Emission Control Technology Evaluation:

The facility will control the PM emissions from the loading and conveying of the cold feed aggregate material by the use of high moisture content material and water fog sprays at conveyor transfer points and other loading operations when needed. According to the applicant the moisture content of the material being processed is estimated to be greater than 1.5% by weight. The high moisture content of the material being processed will prevent visible emissions in excess of 5% opacity. The inactive stockpiles will be watered on an as needed basis to reduce fugitive dust emissions. Water trucks will be required to control fugitive dust emissions from the vehicles traversing the roads.

The facility will also be utilizing precleaned and presized RAP, which is typically sized to 1" minus when utilized in the HMA plant. The inherent asphalt oil content (typically 4.0%) of the RAP functions as a binding medium to minimize fugitive dust emissions.

According to the information provided by the burner manufacturer, the proposed drum dryer burner is a low NOx emitting burner. Per manufacturer, the proposed burner is expected to achieve a maximum NOx emissions concentration of 3.6 ppmvd @ 19% O₂ and a maximum CO emissions concentration of 42 ppmvd @ 19% O₂. The drum dryer will also be fired on natural gas. The particulate matter (PM) emissions from the drum dryer/mixer will be vented to a baghouse with a PM₁₀ control efficiency of at least 99%.

The recommended maximum filtering velocity for rock dust collection in a baghouse or dust collector, served by a reverse air flow cleaning system, is 9 fpm (Reference from Air Pollution Engineering Manual, Air & Waste Management Association –1992 Table 5, page 128). The proposed baghouse will operate within the recommended maximum filtering velocity. Therefore, the baghouse will be acceptable and permit conditions will be used to ensure compliance with all applicable requirements.

PM₁₀ and VOC emissions (blue smoke) due to the loading, storage, and unloading of the asphaltic concrete will be vented to the burner of the drum dryer, which is also vented through a baghouse for emissions control.

VII. General Calculations:

A. Assumptions:

1. Particulate matter (PM) is the only pollutant that will be emitted from the storage, loading, conveying and screening of the cold feed aggregate and reclaim asphalt pavement (RAP).
2. The applicant has proposed a moisture content of at least 1.5% for the cold feed aggregate. Pursuant to AP-42 11.19.1-5, wet suppression has a carryover effect downstream of the point of application of water, as long as the surface moisture content is high enough to cause the fines to adhere to the larger rock particles. Therefore, water sprays are not required at every transfer point to maintain high moisture content.

3. The applicant stated that the RAP will have an asphalt oil content of 4.0%.
4. The PM₁₀ control efficiency of water spray equipment for the storage piles is 80%. Pursuant to AP-42 11.19.1-5, spray systems can reduce loading and wind erosion emissions from storage piles of various materials 80 to 90% (80% shall be used as a conservative estimate).
5. NO_x, CO, SO_x, VOC, and PM₁₀ will be emitted from the combustion of natural gas and from the mixing of the asphaltic oil with aggregate and RAP in the drum dryer/mixer.
6. Baghouse control efficiency of at least 99% for PM₁₀.
7. 100% of the particulate matter emitted from the baghouse will be PM₁₀.
8. PM₁₀, VOC, and CO will be emitted from the filling of the asphaltic concrete storage silo and the truck loadout of the asphaltic concrete.
9. Emissions from the asphalt concrete storage silo vent and silo discharge gate will be vented to the burner of the drum dryer. In addition, the drum dryer is vented through a baghouse.
10. The VOC control efficiency of ducting the asphalt concrete storage silo vent and silo discharge gate (truck loadout) to the burner of the drum dryer is at least 30%⁽²⁾.
11. The PM₁₀ control efficiency of ducting the asphalt concrete storage silo vent and silo discharge gate (truck loadout) to the burner of the rotary drum drier/mixer and associated baghouse is at least 95%⁽³⁾.
12. Total throughput for cold feed and RAP/RAS system is 5,640 tons/day and 470,000 tons/year
13. Asphalt processing rate of drum dryer/mixer shall not exceed 6,000 ton in a day or 500,000 ton in a year
14. Area of stockpiles shall not exceed 5.0 acres
15. Quantity of produced asphaltic concrete transferred into storage silos and loaded out onto trucks shall not exceed 7,500 tons in a day or 500,000 tons in a year

B. Emission Factors:

1. Per applicant, the moisture content of the cold feed aggregate will be at least 1.5%. Pursuant to AP-42, Section 11.19.2, emissions were considered controlled if the material moisture content was greater than or equal to 1.5%. Therefore, AP-42, Table 11.19.2-2 (updated 8/04) controlled emission factors will be used for the cold feed aggregate loading, conveying and scalp screening operations. In addition, the RAP contains 4.0% asphalt oil, which functions as a binding medium for the fine particles. Therefore, AP-42, Table 11.19.2-2 (updated 8/04) controlled emission factors will also be used for the RAP, loading, conveying, and screening operations.

Cold Feed Aggregate & RAP Bin Loading:

² Worse case control efficiency of 30% will be used to calculate the VOC emissions as estimated under District Project # N-1010128 (Permit N-4473-2-1).

³ The PM₁₀ emissions from the asphalt storage silos and truck loadout operation will be ducted to the burner of the drum dryer/mixer and the drum dryer/mixer is vented through a fabric filter baghouse. Therefore, it will be assumed that the total control efficiency for PM₁₀ emissions will be equivalent to that of a blue smoke control unit utilizing a filter pack and a conservative control efficiency of 95% will be used to calculate the PM₁₀ emissions.

An emission factor for truck unloading – fragmented stone from AP-42, Table 11.19.2-2 (updated 8/04) shall be used for the aggregate bin loading since this emission factor is more representative of this operation.

$$EF_{\text{Aggregate Bin Loading}} = 0.000016 \text{ /ton lb-PM}_{10}$$

Screening and Conveyor Transfer Points:

An emission factor for conveyor transfer points (controlled) from AP-42, Table 11.19.2-2 (updated 8/04) shall be used for the scalping screen and conveyor transfer points since this emission factor is more representative of this operation since it is using wet suppression. The screen operation is controlled with a baghouse with an efficiency of 99.9%

$$EF_{\text{Screening/Conveyor Transfer Point}} = 0.000046 \text{ lb-PM}_{10}/\text{ton}$$

$$EF_{\text{Screen}} = 0.00074 \text{ lb-PM}_{10}/\text{ton} \times (1 - 0.99)$$

$$EF_{\text{Screen}} = 0.00000074 \text{ lb-PM}_{10}/\text{ton}$$

Aggregate & RAP Stockpiles:

Emission Factors are calculated using AP42, Section 13.2.5, *Industrial Wind Erosion*, guideline, and based on:

- (1). Threshold Friction Velocity: 0.54 (Worse case, Fine Coal dust on concrete pad.)
- (2). Wind Speed: 12.0 mph (Per District Regulation 8 for District Rule Development.)
- (3). Conical pile with typical U_s/U_r distribution.

For more specific data, use *Wind Erosion Emissions from Bulk Storage Piles for Rule 8031, Bulk Materials1* calculation spreadsheet.

$$EF_{\text{Storage piles}} = 0.17 \text{ lb/acre/day (uncontrolled)}$$

Since this emission factor is based on the stockpile outer surface area, the emission factor will be adjusted by 1.25 of the pile storage area⁽⁴⁾ provided by the applicant. Therefore, the emission factor for active aggregate storage piles becomes:

$$EF_{\text{Storage piles}} = 0.17 \text{ lb-PM}_{10}/\text{acre/day} \times 1.25 = 0.21 \text{ lb-PM}_{10}/\text{acre/day}$$

2. Emission factors (EF) for the proposed 125 MMBtu/hr Gencor Ultradrum Model 400 rotary drum dryer/mixer vented a baghouse for NO_x, and PM₁₀ emissions will be based on the emission factors proposed by the equipment manufacturer. Emission factors for CO and VOC will be based upon source test data conducted on a similar unit (C-7405-1). These emission factors include both emissions from the combustion of the fuel and from the mixing of the asphalt concrete controlled with a baghouse. The proposed EF will be verified by source testing. The EF for

⁴ Ref District Project #N-1083738.

SOx from natural gas combustion is based on a mass balance with 1.0 gr-S/100 ft³ per District Policy APR 1720.

Pollutant	EF _{Natural Gas}
NOx	0.009 lb/ton or 0.040 lb/MMBtu or 3.6 ppmv @ 19% O ₂ (Manufacturer Proposed)
CO	0.068 lb/ton or 0.295 lb/MMBtu or 42 ppmv @ 19% O ₂ (Manufacturer Proposed)
VOC	0.008 lb/ton ⁽⁵⁾
PM ₁₀	0.0029 lb/ton ⁽⁵⁾
SOx	0.0034 lb/ton (AP-42, Table 11.1-7)

3. Emission factors (EF) for the filling of the asphaltic concrete storage silos and the truck loadout of the asphaltic concrete for VOC, CO, and PM₁₀ emissions will be based on the emission factors from AP-42, Table 11.1-14 (Updated 3/04). According to the equipment manufacturer, the Asphalt Volatility (V) is -0.5 and the Hot Mix Asphalt mix temperature (T) is 325 °F. Therefore:

Silo Filling Emission Factors (EF):

$$\begin{aligned} EF_{VOC/Silo\ Filling} &= 0.0504(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.0504(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= 0.0122\ \text{lb-VOC/ton} \end{aligned}$$

$$\begin{aligned} EF_{CO/Silo\ Filling} &= 0.00488(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.00488(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= \mathbf{0.00118\ \text{lb-CO/ton}} \end{aligned}$$

$$\begin{aligned} EF_{PM10/Silo\ Filling} &= 0.000332 + 0.00105(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.000332 + 0.00105(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= 0.000586\ \text{lb-PM}_{10}/\text{ton} \end{aligned}$$

The applicant is proposing to control the VOC and PM₁₀ emissions by ducting the emissions to the burner of the rotary drum dryer/mixer with a control efficiency of at least 30% and 95%, respectively⁽⁶⁾. The proposed controlled EF is the following for silo filling:

$$EF_{VOC/Silo\ Filling\ (Controlled)} = 0.0122\ \text{lb-VOC/ton} \times (1 - 0.30) = \mathbf{0.0085\ \text{lb-VOC/ton}}$$

$$\begin{aligned} EF_{PM10/Silo\ Filling\ (Controlled)} &= 0.000586\ \text{lb-PM}_{10}/\text{ton} \times (1 - 0.95) \\ &= \mathbf{0.000029\ \text{lb-PM}_{10}/\text{ton}} \end{aligned}$$

⁵ Pursuant to source test performed at C-7405-3-1

⁶ Reference Project N-1083738

Silo Loadout Emission Factors (EF):

$$\begin{aligned} EF_{\text{VOC/Loadout}} &= 0.0172(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.0172(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= 0.00416 \text{ lb-VOC/ton} \end{aligned}$$

$$\begin{aligned} EF_{\text{CO/Loadout}} &= 0.00558(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.00558(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= \mathbf{0.00135 \text{ lb-CO/ton}} \end{aligned}$$

$$\begin{aligned} EF_{\text{PM}_{10}\text{/Loadout}} &= 0.000181 + 0.00141(-V)e^{((0.0251)(T + 460) - 20.43)} \\ &= 0.000181 + 0.00141(0.5)e^{((0.0251)(325 + 460) - 20.43)} \\ &= 0.000522 \text{ lb-PM}_{10}\text{/ton} \end{aligned}$$

The applicant is proposing to control the VOC and PM₁₀ emissions by ducting the emissions to the burner of the rotary drum dryer/mixer with a control efficiency of at least 30% and 95%, respectively. The proposed controlled EF is the following for silo loadout:

$$EF_{\text{VOC/Loadout (Controlled)}} = 0.00416 \text{ lb-VOC/ton} \times (1 - 0.30) = \mathbf{0.0029 \text{ lb-VOC/ton}}$$

$$\begin{aligned} EF_{\text{PM}_{10}\text{/Loadout (Controlled)}} &= 0.000522 \text{ lb-PM}_{10}\text{/ton} \times (1 - 0.95) \\ &= \mathbf{0.000026 \text{ lb-PM}_{10}\text{/ton}} \end{aligned}$$

C. Potential to Emit Calculations (PE):

1. Pre-Project Potential to Emit:

Since these are new emissions units, PE1 = 0 for all pollutants.

2. Daily Post-Project Potential to Emit (Daily PE2):

PM₁₀ Emissions from the Handling of the Cold Feed Aggregate & RAP:

$$\text{Daily PE2}_{\text{PM}_{10}\text{/Aggregate \& RAP}} = \text{Processing Rate (ton/day)} \times \text{EF (lb-PM}_{10}\text{/ton)}$$

Since aggregate and RAP/RAS have a combined throughput and the number of emission points are equivalent, all emissions will be calculated through the aggregate line listed on permit unit -1.

Equipment Description	Processing Rate (ton/day)	EF (lb-PM ₁₀ /ton)	Daily PE ₂ Aggregate & RAP (lb-PM ₁₀ /day)
Stockpiling			
From truck to conveyor 26	5640	0.000046	0.26
Transfer from conveyor 26 to conveyor 27		0.000046	0.26
Transfer from conveyor 27 to stockpile		0.000046	0.26
Stockpiles	5 Acres	0.17lb/day/acre	0.9
Total Stockpiling (lb/day)			1.7
Cold Feed			
Transfer from front loader to bins and feeders	5640	0.000046	0.259
Transfer from conveyors 2 to conveyor 3		0.000046	0.259
Transfer from conveyor 3 to conveyor 4		0.000046	0.259
Transfer from conveyor 4 to conveyor 5		0.000046	0.259
Transfer from conveyor 5 to screen		0.000046	0.259
Screen		0.00000074	0.00
Transfer from screen to conveyor 7		0.000046	0.259
Transfer from conveyor 7 to drum mixer		0.000046	0.259
Total Cold Feed (lb/day)			1.8
RAP			
Transfer from front loader to hoppers	-	0.000046	
Transfer from hoppers to conveyor 17		0.000046	
Transfer from hoppers to conveyor 19		0.000046	
Transfer from conveyors 17 & 19 to conveyor 20		0.000046	
Transfer from conveyor 20 to screen		0.000046	
Screen		0.00000074	
Transfer from screen to conveyor 22		0.000046	
Transfer from conveyor 22 to drum mixer		0.000046	
Total RAP (lb/day)			-
Total Aggregate Emissions (lb/day)			3.5

Emissions from Hot Mix Asphalt (HMA) Drum Dryer/Mixer:

$$\text{Daily PE2}_{\text{Drum Dryer/Mixer}} = \text{Processing Rate (ton/day)} \times \text{EF (lb/ton)}$$

Pollutant	Processing Rate or Fuel Heat Input (ton/day)	EF (lb/ton)	Daily PE2
NOx	6,000	0.009	54.0 lb-NOx/day
CO		0.068	408.0 lb-CO/day
VOC		0.008	48.0 lb-VOC/day
PM ₁₀		0.001969	11.8 lb-PM ₁₀ /day
SOx		0.0034	20.4 lb-SOx/day

Emissions from the Filling and Loadout of the Asphaltic Concrete Storage Silo:

$$\text{Daily PE2}_{\text{Silo Filling \& Loadout}} = \text{Processing Rate (ton/day)} \times [\text{EF}_{\text{Silo Filling}} \text{ (lb/ton)} + \text{EF}_{\text{Loadout}} \text{ (lb/ton)}]$$

Pollutant	Processing Rate (ton/day)	EF _{Silo Filling} (lb/ton)	EF _{Loadout} (lb/ton)	Daily PE2 _{Silo Filling \& Loadout}
CO	7,500	0.00118	0.00135	19.0 lb-CO/day
VOC		0.0085	0.0029	85.5 lb-VOC/day
PM ₁₀		0.000029	0.000026	0.4 lb-PM ₁₀ /day

Total Daily PE2:

Total daily PE2 will be based on the combustion in the drum dryer/mixer, emissions from the handling of aggregate/RAP, and emissions from the filling and loadout of the storage silo. Therefore:

$$\text{Total Daily PE2} = \text{Daily PE2}_{\text{Aggregate \& RAP}} + \text{Daily PE2}_{\text{Combustion}} + \text{Daily PE2}_{\text{Silo Filling \& Loadout}}$$

Pollutant	Daily PE2 _{Agg \& RAP} (lb/day)	Daily PE2 _{Combustion} (lb/day)	Daily PE2 _{Silo} (lb/day)	Daily PE2 _{Total}
NOx	0	54.0	0	54.0 lb-NOx/day
CO	0	408.0	19.0	427.0 lb-CO/day
VOC	0	48.0	85.5	133.5 lb-VOC/day
PM ₁₀	3.5	11.8	0.4	15.7 lb-PM ₁₀ /day
SOx	0	20.4	0	20.4 lb-SOx/day

3. Annual Post-Project Potential to Emit (Annual PE2):

Annual emissions will be based on the applicants proposed production rate limit of 500,000 tons/year. Therefore:

PM₁₀ Emissions from the Handling of the Cold Feed Aggregate & RAP:

$$\text{Daily PE}_{2\text{PM}_{10}/\text{Aggregate \& RAP}} = \text{Processing Rate (ton/year)} \times \text{EF (lb-PM}_{10}\text{/ton)}$$

Equipment Description	Processing Rate (ton/year)	EF (lb-PM ₁₀ /ton)	Daily PE ₁ ^{Aggregate & RAP} (lb-PM ₁₀ /year)
Stockpiling			
From truck to conveyor 26	470,000	0.000046	22
Transfer from conveyor 26 to conveyor 27		0.000046	22
Transfer from conveyor 27 to stockpile		0.000046	22
Stockpiles	5 Acres	0.17 lb/day/acre	310
Total Stockpiling (lb/year)			376
Cold Feed			
Transfer from front loader to bins and feeders	470,000	0.000046	21.6
Transfer from conveyors 2 to conveyor 3		0.000046	21.6
Transfer from conveyor 3 to conveyor 4		0.000046	21.6
Transfer from conveyor 4 to conveyor 5		0.000046	21.6
Transfer from conveyor 5 to screen		0.000046	21.6
Screen		0.00000074	0
Transfer from screen to conveyor 7		0.000046	21.6
Transfer from conveyor 7 to drum mixer		0.000046	21.6
Total Cold Feed (lb/year)			151
RAP			
Transfer from front loader to hoppers	-	0.000046	
Transfer from hoppers to conveyor 17		0.000046	
Transfer from hoppers to conveyor 19		0.000046	
Transfer from conveyors 17 & 19 to conveyor 20		0.000046	
Transfer from conveyor 20 to screen		0.000046	
Screen		0.000074	
Transfer from screen to conveyor 22		0.000046	
Transfer from conveyor 22 to drum mixer		0.000046	
Total RAP (lb/year)			-
Total Aggregate Emissions (lb/year)			527

Emissions from Hot Mix Asphalt (HMA) Drum Dryer/Mixer:

$$\text{Daily PE2}_{\text{Drum Dryer/Mixer}} = \text{Processing Rate (ton/year)} \times \text{EF (lb/ton)}$$

Pollutant	Processing Rate or Fuel Heat Input (ton/year)	EF (lb/ton)	Daily PE2
NOx	500,000	0.009	4,500 lb-NOx/day
CO		0.068	34,000 lb-CO/day
VOC		0.008	4,000 lb-VOC/day
PM ₁₀		0.001969	985 lb-PM ₁₀ /day
SOx		0.0034	1,700 lb-SOx/day

Emissions from the Filling and Loadout of the Asphaltic Concrete Storage Silo:

$$\text{Daily PE2}_{\text{Silo Filling \& Loadout}} = \text{Processing Rate (ton/day)} \times [\text{EF}_{\text{Silo Filling}} \text{ (lb/ton)} + \text{EF}_{\text{Loadout}} \text{ (lb/ton)}]$$

Pollutant	Processing Rate (ton/year)	EF _{Silo Filling} (lb/ton)	EF _{Loadout} (lb/ton)	Daily PE2 _{Silo Filling \& Loadout}
CO	500,000	0.00118	0.00135	1,265 lb-CO/year
VOC		0.0085	0.0029	5,700 lb-VOC/year
PM ₁₀		0.000029	0.000026	28 lb-PM ₁₀ /year

Total Annual PE2:

Total annual PE2 will be based on the combustion in the drum dryer/mixer, emissions from the handling of aggregate/RAP, and emissions from the filling and loadout of the storage silo. Therefore:

$$\text{Total Annual PE2} = \text{Annual PE2}_{\text{Aggregate \& RAP}} + \text{Annual PE2}_{\text{Combustion}} + \text{Annual PE2}_{\text{Silo Filling \& Loadout}}$$

Pollutant	Annual PE2 _{Agg \& RAP} (lb/year)	Annual PE2 _{Combustion} (lb/year)	Annual PE2 _{Silo} (lb/year)	Annual PE2 _{Total}
NOx	0	4,500	0	4,500 lb-NOx/year
CO	0	34,000	1,265	35,265 lb-CO/ year
VOC	0	4,000	5,700	9,700 lb-VOC/ year
PM ₁₀	527	985	28	1,540 lb-PM ₁₀ / year
SOx	0	1,700	0	1,700 lb-SOx/ year

4. Pre-Project Stationary Source Potential to Emit (SSPE1):

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at the Stationary Source; therefore, the SSPE1 is equal to zero.

5. Post-Project Stationary Source Potential to Emit (SSPE2):

Pursuant to District Rule 2201 Section 4.10, the SSPE2 is calculated on a pollutant by pollutant basis and is the potential to emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the stationary source and the quantity of Emission Reduction Credits (ERC) that have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site. There are no ERCs listed for this facility.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
C-8476-1-1	4,500	1,700	1,540	35,265	9,700
C-8476-2-1	0	0	0	0	0
SSPE2	4,500	1,700	1,540	35,265	9,700

6. Major Source Determination

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Facility emissions pre-project	0	0	0	0	0
Facility emissions – post project	4,500	1,700	1,540	35,265	9,700
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀	CO _{2e}
Estimated Facility PE before Project Increase	0	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	N

As shown above, the facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD.

7. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.6 above, the facility is not a Major Source for any pollutant.

Therefore BE=PE1=0.

8. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

9. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM10 (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix D.

11. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	2	3	1	18	1	1	64,101
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	N	N	N	N	N	N	N

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

Since this new asphaltic concrete batch plant is composed of new emissions units, the daily emissions are compared to the BACT thresholds in the following tables:

Aggregate Handling			
Emissions Units	Daily PE2 (lb-PM ₁₀ /day)	BACT Threshold	BACT Required?
Aggregate and RAP Stockpiling	1.7	2.0 lb/day	No
Aggregate and RAP Conveyors	1.8	2.0 lb/day	No
Aggregate and RAP Screen	0.0	2.0 lb/day	No

Thus BACT will be not triggered for PM₁₀ emissions from the aggregate receiving operation, aggregate bin loading operation, aggregate conveyors, and the aggregate screening operation for this project.

Drum Mix				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	54.0	> 2.0	n/a	Yes
SO _x	20.4	> 2.0	n/a	Yes
PM ₁₀	11.8	> 2.0	n/a	Yes
CO	408.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	35,265	No
VOC	48.0	> 2.0	n/a	Yes

Thus BACT will be triggered for NO_x, SO_x, PM₁₀ and VOC emissions from the drum mixer for this project.

New Emissions Unit BACT Applicability				
Emissions Units	Pollutant	Daily PE2 (lb-PM ₁₀ /day)	BACT Threshold	BACT Required?
Asphaltic Concrete Silo Loading	PM ₁₀	0.4	2.0 lb/day	No
	CO	20.0	> 2.0 and SSPE2 ≥ 200,000 lb/yr	No
	VOC	85.5	2.0 lb/day	Yes

Thus BACT will be triggered for VOC emissions from the silo loading

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed previously in Section I, this asphaltic concrete drum mix operation is not being modified as a result of this project. Therefore, BACT is not triggered for the modification of emissions units with an AIPE > 2 lb/day.

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_x emissions. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 6.3.1, 2nd quarter 2013, which appears in Appendix E of this report, covers Asphaltic Concrete - Drum Mix Plant, = or > 2,000 ton/day OR = or > 75.6 MMBtu/hr burner

3. Top-Down BACT Analysis

Pursuant to the BACT Analysis which appears in Appendix E of this report, BACT for each emissions unit identified in Section 1 above is satisfied with:

NO_x: 0.088 lb/MMBtu Low-NO_x burner with natural gas or LPG as the primary fuel.

SO_x: PUC quality natural gas or LPG as primary fuel.

PM₁₀: 99% control efficiency (rotary drum vented to dust collector).

VOC: Natural gas or LPG as primary fuel.

To enforce BACT requirements, the following permit conditions will be listed on permit as follows:

- Emissions rates from the rotary dryer/mixer shall not exceed any of the following limits: 0.009 lb-NO_x/ton-asphalt (equivalent to 0.04 lb/MMbtu), 0.0034 lb-SO_x/ton-asphalt, 0.001969 lb-PM₁₀/ton-asphalt, 0.068 lb-CO/ton-asphalt, or 0.008 lb-VOC/ton-asphalt. [District Rule 2201]
- This unit shall be fired solely on PUC-regulated natural gas. [District Rule 2201]

Asphaltic Concrete Storage and Truck Loading Operation

For Asphaltic Concrete Silo Loading and Truck Loading:

- Enclosed hot mix silos and loadout operation vented to a fiberbed filtration system

To enforce BACT requirements, the following permit conditions will be listed on permit as follows:

- The drag slat conveyor and silo transverse conveyor shall be enclosed and vented to a fiberbed mist collector system. [District Rule 2201]
- The truck loadout area shall be equipped with a wind break on three sides and shall be served by a blue smoke collection system which is vented to a fiberbed mist collector system. [District Rule 2201]

B. Offsets

1. Offset Applicability

Pursuant to Rule 2201, Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis, unless exempt per Section 4.6. Offsets are required if the post-project SSPE2 totals equals or exceeds the following offset thresholds for any pollutant:

Pollutant	Offset Thresholds (lb/yr)	SSPE2 (lb/yr)	Offsets Triggered
NOx	20,000	4,500	No
CO	200,000	35,265	No
VOC	20,000	9,700	No
PM ₁₀	29,200	1,540	No
SOx	54,750	1,700	No

As shown in the table above, the SSPE2 is not greater than or equal to the offset threshold levels for any criteria pollutant. Therefore, offsets will not be required.

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in VII.C.7, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

b. PE > 100 lb/day

PE > 100 lb/day Public Notice Thresholds			
Pollutant	Daily PE (lb/day)	Public Notice Threshold (lb/day)	Public Notice Triggered?
NO _x	54.0	100	No
SO _x	20.4	100	No
PM ₁₀	15.7	100	No
CO	428.0	100	Yes
VOC	133.5	100	Yes

Therefore, public noticing is required for daily emissions greater than 100 lb/day for a new emissions unit.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	0	4,500	20,000 lb/year	No
SO _x	0	1,700	54,750 lb/year	No
PM ₁₀	0	1,540	29,200 lb/year	No
CO	0	35,265	200,000 lb/year	No
VOC	0	9,700	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	4,500	0	4,500	20,000 lb/year	No
SO _x	1,700	0	1,700	20,000 lb/year	No
PM ₁₀	1,540	0	1,540	20,000 lb/year	No
CO	35,265	0	35,265	20,000 lb/year	Yes
VOC	9,700	0	9,700	20,000 lb/year	No

Therefore, public noticing is required for exceeding the SSIPE thresholds.

2. Public Notice Action

As discussed above, public noticing is required for this project. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emission Limits (DELs) are required by Rule 2201, section 5.7.2. The daily emission limits will be based on the maximum quantity of material processed (aggregate & RAP) and emission rate in pounds emitted per ton of material processed. The daily emission limits for the material stockpiles (aggregate & RAP) will be based on the maximum quantity of material stored and emission concentration in pounds of PM₁₀ emitted per acre of material stored. The following limits will be placed on the Authority to Construct and Permit to Operate to enforce the requirements of this section:

DEL for Aggregate & RAP Handling		
Process Description	Maximum Processing Rate	Emission Rate
Aggregate and RAP/RAS Receiving & Processing	5,640 tons/day	0.0004 lb-PM ₁₀ /ton ⁽⁷⁾
Aggregate & RAP Stockpiles	5.0 acres/day ⁽⁸⁾	0.21 lb-PM ₁₀ /acre/day ⁽⁹⁾

The DEL from the HMA drum dryer/mixer will be based on the maximum quantity of asphaltic concrete produced or daily fuel heat input and the emission rate or emission concentration of each pollutant. The following limits will be placed on the Authority to Construct and Permit to Operate to enforce the requirements of this section:

- The quantity of aggregate and recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) (listed on permit unit C-8476-2) processed shall not exceed 5,640 tons in any one day and 470,000 tons in any one calendar year.
- Asphalt processing rate of drum dryer/mixer burned shall not exceed 6,000 ton in any one day or 500,000 ton in any one calendar year.

⁷ PM10 Emission Rate = Σ EF (Aggregate Receiving & Processing) = 0.000016 lb-PM10/ton + (3 × 0.000046 lb-PM10/ton) + 0.000016 lb-PM10/ton + (5 × 0.000046 lb-PM10/ton) = 0.0004 lb-PM10/ton

⁸ Combined Material Stockpiles (Aggregate & RAP)

⁹ PM10 Emission Rate = Controlled Emission Factor (Storage Piles) = 0.21 lb-PM10/acre/day

DEL for the HMA Drum Dryer/Mixer	
Pollutant	Emission Rate or Emission Concentration⁽¹⁰⁾
NOx	0.009 lb/ton
CO	0.0068 lb/ton
VOC	0.008 lb/ton
PM ₁₀	0.0001969lb/ton
SOx	0.00341 lb/ton

The DEL for the filling and loadout of the HMA storage silos will be based on the maximum quantity of asphaltic concrete processed through the HMA storage silos and the emission rate in pounds emitted per ton of material processed. The following limits will be placed on the Authority to Construct and Permit to Operate to enforce the requirements of this section:

- Maximum daily quantity of asphaltic concrete transferred into the storage silos and loaded into trucks shall not exceed 7,500 tons/day.

DEL for the Filling and Loadout of the Storage Silo	
Pollutant	Emission Rate⁽¹¹⁾
CO	0.00118 lb/ton (Silo Filling)
	0.00135 lb/ton (Silo Loadout)
VOC	0.0085 lb/ton (Silo Filling)
	0.0029 lb/ton (Silo Loadout)
PM ₁₀	0.000029 lb/ton (Silo Filling)
	0.000026 lb/ton (Silo Loadout)

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules.

1. Source Testing

Pursuant to District Policy APR 1705 (Source Testing Frequency), initial source testing for NOx and PM₁₀ emissions shall be required for asphaltic concrete plants. The applicant is also proposing a CO emission rate to comply with the requirements of District Rule 4309 (Dryers, Dehydrators, and Ovens). Therefore, initial source testing for NOx, CO, and PM₁₀ emissions will be required for the proposed new asphaltic concrete plant. Permit conditions will be included in the Authority to Construct permit to specify the following test methods:

¹⁰ The emission rates and emission concentrations are equal to the emission factors as determined in Section VII.B. of this document.

¹¹ The emission rates are equal to the emission factors as determined in Section VII.B. of this document.

NOx Emission Rate:	EPA Method 7E or CARB Method 100
CO Emission Rate:	EPA Method 10 or CARB Method 100
Stack Gas Oxygen:	EPA Method 3 or 3A, or CARB Method 100
Stack Gas Velocity:	EPA Method 2
Stack Gas Moisture Content:	EPA Method 4
PM ₁₀ Emission Rate:	EPA Method 201 and 202, or EPA Method 201A and 202, or CARB Method 501 and 5

Also, in lieu of performing a source test for PM₁₀, the applicant is allowed the option to use the results of the total particulate test to show compliance with the PM₁₀ emissions limit provided the results include both the filterable and condensable (back half) particulates, and that all particulate matter is assumed to be PM₁₀.

The proposed HMA facility is subject to the requirements of the Code of Federal Regulations, Chapter 40 (40 CFR), Part 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities). Therefore, source testing as required by 40 CFR, Part 60, Subpart I is required. Pursuant to the referenced Subpart I, the below listed test methods will be required. Permit conditions will be included in the Authority to Construct permit to specify the following test methods:

Particulate Matter Concentration:	EPA Method 5
Opacity:	EPA Method 9

2. Monitoring

The rotary drum dryer/mixer will be subject to the monitoring requirements of District Rule 4309 (Dryers, Dehydrators, and Ovens). Monitoring requirements, in accordance with District Rules 4309, will be discussed in Section VIII, District Rules 4309, of this evaluation.

3. Record Keeping

The following recordkeeping requirements will be placed on the Authority to Construct permit and Permit to Operate.

- The permittee shall maintain records of dates and locations where the HMA plant operates. [District Rule 1070]
- A daily log shall be maintained and shall include the following:
 - (a). Total quantity of aggregate used (in tons);
 - (b). Total quantity of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) used (in tons);
 - (c). Total storage area (in acres) of the aggregate stockpiles;
 - (d). Total storage area (in acres) of the recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) stockpiles;
 - (e). Total quantity of asphaltic concrete produced (in tons);
 - (f). Type and total quantity of fuel consumed by the rotary drum dryer;
 - (g). Total quantity of asphaltic concrete transferred into the storage silos;
 - (h). Total quantity of asphaltic concrete loaded into trucks.

- (i). Total hours the asphaltic concrete batch plant was operated in any one rolling 24 hour period. [District Rules 1070 & 2201]
- The permittee shall maintain a record of the cumulative annual amount of asphaltic concrete produced, transferred into the storage silos, and loaded into trucks. The cumulative total shall be updated monthly. [District Rules 1070 & 2201]
 - The permittee shall maintain a record of the cumulative annual heat input to the rotary drum dryer/mixer. The cumulative total shall be updated monthly. The heat input can be determined by multiplying the amount of fuel burned by its corresponding heating value (natural gas = 1,000 Btu/scf). [District Rules 1070 & 2201]
 - All records shall be retained with the equipment for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

4. Reporting

There are no reporting requirements for the proposed new HMA plant.

F. Ambient Air Quality Analysis

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix E of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

The results from Criteria Pollutant Modeling are as follows:

C-8476-1-1 & -2-1	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	N/A ²	N/A ²
PM _{2.5}	X	X	X	N/A ²	N/A ²

*Results were taken from the PSD spreadsheets submitted with the AAQA request.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2012 using the District's approved procedures.

²These criteria pollutants were evaluated in the preceding table and are below the District's interim thresholds for fugitive dust sources.

As shown, the calculated contribution of criteria pollutants will not exceed the EPA significance level. This project is not expected to cause or make worse a violation of an air quality standard.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential to emit does not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards

According to §60.90(b) of *40 CFR 60 Subpart I-Standards of Performance for Hot Mix Asphalt Facilities*, the requirements of this subpart apply to any hot mix asphalt facility that commences construction or modification after June 11, 1973. The applicant is proposing to install a new hot mix asphalt facility. Therefore, the proposed new facility is subject to this subpart.

According to §60.92 (Standards for Particulate Matter), the particulate matter concentration shall not exceed 0.04 gr/dscf and the visible emissions shall be less than 20 percent opacity.

According to §60.93 (Test Methods and Procedures), the owner or operator shall determine compliance with the above standards utilizing EPA Method 5 for particulate matter concentration and EPA Method 9 for opacity.

The following permit conditions will be included in the Authority to Construct permit and Permit to Operate to ensure compliance with the above standards, test methods, and procedures. Therefore, compliance with District Rule 4001 requirements is expected:

- Source testing to determine the particulate matter concentration from the baghouse serving the drum dryer/mixer as required by 40 CFR Part 60, Subpart I: Standards of Performance for Asphalt Concrete Plants shall be conducted using EPA method 5. [District Rule 4001 and 40 CFR §60.93(b)(1)]
N

- Source testing to determine opacity as required by 40 CFR Part 60, Subpart I: Standards of Performance for Asphalt Concrete Plants shall be conducted using EPA method 9. [District Rule 4001 and 40 CFR §60.93(b)(2)] N
- Source testing to measure PM10 emissions shall be conducted using EPA method 201 and 202, or EPA method 201A and 202, or CARB method 501 and 5. [District Rule 1081 and 40 CFR §60.93] N
- In lieu of performing a source test for PM10, the results of the total particulate test may be used for compliance with the PM10 emission limit provided the results include both the filterable and condensable (back half) particulates, and that all particulate matter is assumed to be PM10. If this option is exercised, source testing shall be conducted using CARB Method 5 or EPA Method 5 (including condensable (back half) particulates). [District Rule 1081 and 40 CFR §60.93] N

Rule 4101 Visible Emissions

No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is as dark or darker than Ringelmann 1 or equivalent to 20% opacity. Opacity is expected to be less than 20% provided that all of the equipment is maintained and operated properly.

The PM emissions from the rotary drum drier/mixer will be controlled with a baghouse. Pursuant to District Policy SSP 1005, the visible emissions from a baghouse shall be limited by permit conditions to not equal or exceed 5% opacity for a period or periods aggregating more than three (3) minutes in any one (1) hour. If the equipment is properly maintained this condition should not be exceeded. Conditions will be placed on the Authority to Construct permit and Permit to Operate to ensure compliance with the visible emission requirements.

Rule 4102 Nuisance

As long as the equipment is properly maintained and operated the emission units will not discharge any air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or public or which cause or have a natural tendency to cause injury or damage to business or property.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix E), the total facility prioritization score including this project was greater than one. Therefore, an

HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
C-8476-1-1 & -2-1	1.7 per million	Yes

Discussion of T-BACT

T-BACT is required for this unit because of emissions of hexavalent chromium and formaldehyde which are PM10 and VOC, respectively. In accordance with District policy, BACT will be considered to be T-BACT.

To ensure that human health risks will not exceed District allowable levels; the following permit conditions will be included:

Asphalt processing rate of drum dryer/mixer burner shall not exceed 6,000 ton in any one day or 500,000 ton in any one calendar year. [District Rule 2201] N

PM10 emissions from the receiving and processing of the aggregate shall not exceed 0.00046 lbPM10/ton of aggregate received and processed. [District Rule 2201] N

PM2.5 emissions from the receiving and processing of the aggregate shall not exceed 0.000013 lb-PM2.5/ton of aggregate received and processed. [District Rule 4102] N

The PM10 emissions rate from aggregate screening shall not exceed 0.00000074 lb-PM-10/ton-aggregate. [District Rule 2201] N

The PM2.5 emissions rate from aggregate screening shall not exceed 0.0000005 lb-PM-2.5/ton-aggregate [District Rule 4102] N

The area of active and inactive stockpiles for the asphaltic concrete manufacturing plant shall not exceed 5.0 acres. [District Rule 2201] N

PM10 emissions from the stockpiles for the asphaltic concrete manufacturing plant shall not exceed 0.17 pounds per acre of storage area per day. [District Rule 2201] N

PM2.5 emissions from the stockpiles for the asphaltic concrete manufacturing plant shall not exceed 0.0093 pounds per acre of storage area per day [District Rule 4102] N

The quantity of aggregate and recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) (listed on permit unit C-8476-2) processed shall not exceed 5,640 tons in any one day and 470,000 tons in any one calendar year. [District Rule 2201] N

The quantity of produced asphaltic concrete transferred into the storage silo and loaded out into trucks shall not exceed 7,500 tons in any one day and 500,000 tons in any one calendar year. [District Rule 2201] N

Emissions from the transfer of the produced asphaltic concrete into the storage silo shall not exceed any of the following limits: 0.00118 pounds of CO per ton of asphaltic concrete silo transferred, 0.0085 pounds of VOC per ton of asphaltic concrete transferred, or 0.000029 pounds of PM10 per ton of asphaltic concrete transferred. [District Rule 2201] N

Emissions from truck loading of asphaltic concrete shall not exceed any of the following limits: 0.00135 pounds of CO per ton of asphaltic concrete loaded, 0.0029 pounds of VOC per ton of asphaltic concrete loaded, or 0.000026 pounds of PM10 per ton of asphaltic concrete loaded. [District Rule 2201] N

Rule 4201 Particulate Matter Concentration

Section 3.0 of this Rule prohibits the release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions, as determined by the test methods in section 4.0 of this Rule.

As long as the new equipment is properly maintained and operated it is expected that the particulate matter concentration from the exhaust of the baghouse will be:

From the Baghouse serving the Hot Mix Asphalt Drum Dryer:

Max. Quantity of PM: 85.5 lb-PM/day⁽¹²⁾
 Max. Operating Hours: 24 hr/day (1,440 min/day)
 Air Flow Rate: 89,217 dscfm

$$\begin{aligned} \text{PM Concentration} &= (5.2 \text{ lb-PM/day} \times 7,000 \text{ grains/lb.}) \\ &\div (89,217 \text{ dscfm} \times 1,440 \text{ min/day}) \\ &= 0.00048 \text{ grains/scf} \end{aligned}$$

Therefore it can be assumed that under dry conditions that the emission units will not exceed the maximum allowable 0.1 grains/dscf and compliance with this rule is expected.

Rule 4202 Particulate Matter Emission Rate

Maximum Allowable Emission Rate:

$$E_{\text{Max.}} = 17.31 P^{0.16}$$

where: E = Emissions in lb/hr
 P = Process weight in ton/hr (P > 30 tons/hr)

Permit Number	E _{Proposed} (lb-PM/hr)	P (ton/hr)	E _{Max.} (lb-PM/hr)
C-8476-1 & -2	3.5 ⁽¹³⁾	250 ⁽¹⁴⁾	41.9

¹² Assuming all of the PM emitted from the baghouse is emitted as PM₁₀, the total PM emission rate from the baghouse is (85.5 lb-PM₁₀/day) ÷ 1.0 lb PM₁₀/lb PM = 85.5 lb-PM/day.

¹³ Based on the assumption that 100% of the PM is PM10, therefore:

Since the proposed PM Emission rate is less than the allowable maximum emission rate, the proposed operations are expected to operate in compliance with this rule.

Rule 4301 Fuel Burning Equipment

Pursuant to Section 3.1 of this rule, this rule applies only to units that produce heat or power via indirect heat transfer. The proposed drum dryer/mixer is a direct-fired unit. Thus, this rule does not apply.

Rule 4309 Dryers, Dehydrators, and Ovens

The HMA plant associated with this project is natural gas fired with a maximum heat input of 125 MMBtu/hr. Pursuant to Section 2.0 of District Rule 4309, the unit is subject to the requirements of this Rule.

Section 5.2, NO_x and VOC Emissions Limits

The proposed HMA plant falls under Asphalt Plants of Table 1 in section 5.0 of this Rule, which lists the following requirements for gaseous fuels:

NO_x: 4.3 ppmvd @ 19% O₂
CO: 42 ppmvd @ 19% O₂

The applicant is proposing the following emission concentrations limits for the proposed HMA plant for natural gas:

NO_x: 3.6 ppmvd @ 19% O₂
CO: 42 ppmvd @ 19% O₂

Therefore, compliance with Section 5.2 of District Rule 4309 is expected.

Section 5.4, Monitoring Provisions

Section 5.4.1 requires each unit subject to section 5.2 to either install a continuous emissions monitoring system (CEMS) for NO_x, CO, and oxygen or implement an APCO-approved Alternate Monitoring System. The applicant chooses the latter option, and proposes to use Option A (periodic monitoring using District-approved portable analyzer) from the District's pre-approved Alternate Monitoring Schemes contained in District Policy SSP 3005 (4/28/2008). The following conditions will be incorporated into the permit in order to ensure compliance with the requirements of the proposed alternate monitoring plan:

- {Modified 3741} The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month in which asphalt is produced on at least five days or for at least 32 hours, whichever comes first (and in which a source test is

$$E_{\text{Proposed}} = 85.5 \text{ lb-PM/day} \div 24 \text{ hr/day} = 3.5 \text{ lb-PM/hr}$$

¹⁴ Per applicant, the maximum processing rate of the HMA batch plant will be 6,000 tons/day operating at 24 hrs/day, therefore: $P = 6,000 \text{ tons/day} \div 24 \text{ hr/day} = 250 \text{ tons/hr}$

not performed), using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 production days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]

- {3742} If either the NO_x or CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4309]
- {3743} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]
- {3744} The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range [District Rule 4309]

Section 5.5, Compliance Determination

Section 5.5.1 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Section 5.5.2 requires that no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. Therefore, the following permit condition will be listed on the permit as follows:

- {3713} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to

Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rules 4309]

Section 5.5.5 requires that for emissions monitoring pursuant to Sections 5.4.1.2.2.1, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

Therefore, since the applicant proposed to use a portable analyzer to satisfy the monitoring requirements of District Rule 4309, the following permit condition will be listed on the permit as follows:

- {3743} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4309]

Section 5.5.6 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. Therefore, the following permit condition will be listed on the permit as follows:

- {3715} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4309]

Section 6.1, Recordkeeping

Section 6.1.6 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule. A permit condition will be listed on the permit as follows:

- {Modified 2983} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4309]

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
Fuel hhv	Fuel hhv shall be certified by third party fuel supplier or:	
	Liquid fuels	ASTM D 240-87 or D 2382-88
	Gaseous fuels	ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89
NO _x	ppmv	EPA Method 7E or ARB Method 100
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O ₂	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4

The following permit conditions will be listed on the permit as follows:

- {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- {3718} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
- {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
- {3720} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]

Section 6.3, Compliance Demonstration

Section 6.3.2 requires the permittee to perform initial source test to determine compliance with NO_x and CO emission limits. Furthermore, the unit is required to be tested every 24 months. The applicant will be required to perform a source test to satisfy the requirements of this section.

The following conditions will be included in the permit to verify compliance with the proposed NO_x and CO emission limits:

- Source testing to measure NO_x and CO emissions from this unit shall be conducted at least once every twenty four (24) months thereafter. [District Rules 2201 and 4309]

- {3722} All test results for NO_x and CO shall be reported in ppmv @ 19% O₂ (or no correction if measured above 19% O₂), corrected to dry stack conditions. [District Rule 4309]
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

In addition to the provisions of Section 6.3, Section 6.4 allows asphalt/concrete plants to choose one of the following options for source testing:

- Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source.
- Test the unit using aggregate from a source different from the source used during normal operations.
- Test the unit using a heat-absorbing material in the dryer, but no aggregate.
- Test the unit with no material in the dryer.

The following permit conditions will be listed on the permit as follows:

- Source testing to measure NO_x and CO emissions from the asphalt/concrete plant shall be conducted utilizing one of the following options: (a). Test the unit using locally mined aggregate in the dryer. If the source test using locally mined aggregate fails, the operator may re-run the source test using aggregate from a different source.; (b). Test the unit using aggregate from a source different from the source used during normal operations.; (c). Test the unit using a heat-absorbing material in the dryer, but no aggregate.; (d). Test the unit with no material in the dryer. [District Rule 4309]

Section 7.0, Compliance Schedule

For an operator of an asphalt/concrete unit subject to this rule, Section 7.3.2 requires the permittee to demonstrate full compliance with this Rule by December 1, 2009. The applicant is expected to test this dryer before this date. Therefore, compliance is expected with this section.

Conclusion

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule. Therefore, compliance with District Rule 4309 requirements is expected.

Rule 4641 Cutback, Slow Cure, Emulsified Asphalt, Paving and Maintenance Operations

According to the applicant, the proposed asphaltic manufacturing facility will not be utilizing or producing cutback, slow cure, or emulsified asphaltic concrete products. Therefore, compliance with this rule is expected. The following condition will be included in their permits to enforce the requirements of this rule.

- Neither cutback, slow cure, or emulsified asphaltic concrete products (as defined in District Rule 4641, Sections 3.2, 3.4, 3.10, and 5.1) shall be utilized or produced at this facility. [District Rule 4641]

Rule 4801 Sulfur Compounds

Section 3.1 prohibits emissions of sulfur compounds as SO₂ in excess of 0.2% by volume (2,000 ppmv) averaged over 15 minutes.

From Section VII.B.2. of this document, the worst case SO₂ emissions are calculated based on an emission factor of 0.016 lb-SO_x/MMBtu due to the combustion of natural gas. Therefore:

$$\begin{aligned} \text{lb-SO}_2/\text{exhaust vol.} &= (\text{lb-SO}_2/\text{MMBtu}) \div (\text{F factor}) \\ &= (0.00285 \text{ lb-SO}_2/\text{MMBtu}) \div (8,578 \text{ dscf/MMBtu}^{(15)}) \\ &= 3.3 \times 10^{-7} \text{ lb-SO}_2/\text{dscf} \end{aligned}$$

$$\text{Volume SO}_2/\text{exhaust vol.} = nRT/P$$

$$\begin{aligned} \text{Where, } n &= \text{moles SO}_x = (3.3 \times 10^{-7} \text{ lb-SO}_2/\text{dscf}) \div (64 \text{ lb-SO}_2/\text{lb-mol}) \\ &= 5.1 \times 10^{-9} \text{ lb-mol/dscf} \end{aligned}$$

$$R = \text{Universal gas constant} = 10.73 \text{ psi-ft}^3/\text{lb-mol-}^\circ\text{R}$$

$$T = 60^\circ\text{F standard temperature} = 520^\circ \text{R}$$

$$P = \text{Standard atmospheric pressure} = 14.7 \text{ psi}$$

$$\begin{aligned} \text{Volume SO}_2/\text{exhaust vol.} &= [(5.1 \times 10^{-9} \text{ lb-mol/dscf}) \times (10.73 \text{ psi-ft}^3/\text{lb-mol-}^\circ\text{R}) \\ &\quad \times (520^\circ \text{R})] \div 14.7 \text{ psi} \\ &= 1.4 \times 10^{-5} \text{ dscf-SO}_2/\text{dsc-exhaust} \\ &= 14 \text{ ppmv} \ll 2,000 \text{ ppmv} \end{aligned}$$

Compliance with this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

This operation will be operated at various locations throughout the District. A condition will be included in the permit to prohibit the operation of the equipment within 1,000 feet of a K-12 school site boundary. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

California Environmental Quality ACT (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

¹⁵ Assumed to be equal to the F-Factor for natural gas.

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The City of Fresno (City) is the public agency having principal responsibility for approving the Project. As such, the City served as the Lead Agency for the project. Pursuant to Section 21157.1 of the California Public Resources Code (California Environmental Quality Act), the City prepared an Initial Study to evaluate the proposed project in accordance with land use and environmental policies and provisions of the City's General Plan. The City made the following findings and adopted a Finding of Conformity for this project:

- The project is fully within the scope of the Master Environmental Impact Report (MEIR) prepared for the General Plan;
- The project will not generate additional significant environmental effects not previously examined in the MEIR; and
- No new or additional mitigation measures or alternatives are required.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project design elements and permit conditions, project specific stationary source emissions will be reduced and mitigated to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Issue Authority to Construct permits C-8476-1-1 & -2-1 subject to the conditions on the attached draft Authority to Construct permit.

X. Billing Information

Application Number	Fee Schedule	Fee Description	Fee
C-8476-1-1	3020-02-H	Total Heat Input: 125 MMBtu/hr	\$1030
C-8476-2-2	3020-01-C	45 hp	197

XI. Appendices:

- Appendix A: Draft ATC
- Appendix B: GHG Calculations
- Appendix C: BACT Guideline 6.3.1 and Top-Down BACT Analysis
- Appendix D: Quarterly Net Emissions Change
- Appendix E: Risk Management Review and AAQA Summary

Appendix A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-8476-1-1

LEGAL OWNER OR OPERATOR: VULCAN MATERIAL COMPANY
MAILING ADDRESS: 11599 OLD FRIANT ROAD
FRESNO, CA 93730

LOCATION: 3570 WEST ASHLAN AVE
FRESNO, CA

EQUIPMENT DESCRIPTION:

HOT MIX ASPHALTIC CONCRETE MANUFACTURING PLANT CONSISTING OF THE FOLLOWING: AGGREGATE RECEIVING AND STORAGE; SIX COLD FEED AGGREGATE BINS EACH WITH A FEED BELT CONVEYOR; THREE COLLECTING CONVEYOR FEEDING A VIBRATING SCREEN SERVED BY A DCE BAGHOUSE WITH A DRUM MIXER FEED CONVEYOR; ONE 125 MMBTU/HR NATURAL GAS FIRED ASTEC MODEL RDB-10847 DRUM DRYER/MIXER WITH A LOW-NOX BURNER VENTED TO A ASTEC MODEL RBH-96-18W BAGHOUSE; ONE ENCLOSED DRAG SLAT CONVEYOR; FIVE 300-TON ASPHALT CONCRETE STORAGE SILO WITH A TRUCK LOADOUT. THE ASPHALT CONCRETE STORAGE SILO AND TRUCK LOADOUT ARE VENTED TO A BLUE SMOKE FILTER PACK

CONDITIONS

1. This Authority to Construct (ATC) cancels and supersedes ATC C-8476-1-0. [District Rule 2201]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. {24} All haul roads and other roadways traversed by mobile equipment and/or motor vehicles shall be adequately moistened with water at such a frequency as required to prevent visible emissions equal to or in excess of 20% opacity from such roads. [District Rule 2201]
5. All stockpiled aggregate, reclaimed asphalt pavement, and other materials shall be maintained adequately moist to prevent visible emissions in excess of 20% opacity. [District Rule 2201]
6. {271} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services
C-8476-1-1: May 8 2013 1:06PM - MASLOWST : Joint Inspection NOT Required

7. The facility shall not manufacture or use cut back, slow cure, or emulsified asphalt containing organic compounds in excess of three percent by volume, which evaporates at 500 F or lower at this facility. [District Rule 4641]
8. Visible emissions from the baghouse serving the asphaltic concrete rotary drum dryer/mixer shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour. [District Rule 2201]
9. Visible emissions from the baghouse serving the aggregate screen shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour [District Rule 2201]
10. The exhaust stack of the baghouse shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (a flapper type rain cap is acceptable), roof overhang, or any other obstruction. [District Rule 4102]
11. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
12. The differential pressure gauge reading range shall be established per manufacturer's recommendation at time of start up inspection. [District Rule 2201]
13. Replacement bags numbering at least 10% of the total number of bags in the largest baghouse using each type of bag shall be maintained on the premises. [District Rule 2201]
14. Material removed from the baghouse shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
15. The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
16. Particulate matter emissions from the exhaust stack of the baghouse shall not exceed 0.04 grains/dscf. [40 CFR §60.92(a)(1)]
17. The drum dryer/mixer burner shall be fired only on natural gas. [District Rule 2201]
18. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted by the drum dryer/mixer burner shall be installed, utilized, and properly maintained. [District Rule 2201]
19. Asphalt processing rate of drum dryer/mixer burner shall not exceed 6,000 ton in any one day or 500,000 ton in any one calendar year. [District Rule 2201]
20. PM10 emissions from the receiving and processing of the aggregate shall not exceed 0.00046 lbPM10/ton of aggregate received and processed. [District Rule 2201]
21. PM2.5 emissions from the receiving and processing of the aggregate shall not exceed 0.000013 lb-PM2.5/ton of aggregate received and processed. [District Rule 4102]
22. The PM10 emissions rate from aggregate screening shall not exceed 0.00000074 lb-PM-10/ton-aggregate. [District Rule 2201]
23. The PM2.5 emissions rate from aggregate screening shall not exceed 0.0000005 lb-PM-2.5/ton-aggregate [District Rule 4102]
24. The area of active and inactive stockpiles for the asphaltic concrete manufacturing plant shall not exceed 5.0 acres. [District Rule 2201]
25. PM10 emissions from the stockpiles for the asphaltic concrete manufacturing plant shall not exceed 0.17 pounds per acre of storage area per day. [District Rule 2201]
26. PM2.5 emissions from the stockpiles for the asphaltic concrete manufacturing plant shall not exceed 0.0093 pounds per acre of storage area per day [District Rule 4102]
27. The quantity of aggregate and recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) (listed on permit unit C-8476-2) processed shall not exceed 5,640 tons in any one day and 470,000 tons in any one calendar year. [District Rule 2201]
28. NOx emissions from the drum dryer/mixer shall not exceed 0.009 lb-NOx/ton or 3.6 ppmvd @ 19% O2 (referenced as NO2). [District Rule 2201]

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29. CO emissions from the drum dryer/mixer shall not exceed 0.068 pounds per ton of asphaltic concrete produced or 42 ppmvd @ 19% O₂ (referenced as NO₂). [District Rule 2201]
30. VOC emissions from the drum dryer/mixer shall not exceed 0.008 pounds per ton of asphaltic concrete produced. [District Rule 2201]
31. PM₁₀ emissions (measured at the baghouse outlet serving the drum dryer/mixer) shall not exceed 0.001969 pounds per ton of asphaltic concrete produced. [District Rule 2201]
32. SO_x emissions from the combustion of natural gas shall not exceed 0.0034 pounds per ton of asphaltic concrete produced. [District Rule 2201]
33. The quantity of produced asphaltic concrete transferred into the storage silo and loaded out into trucks shall not exceed 7,500 tons in any one day and 500,000 tons in any one calendar year. [District Rule 2201]
34. Emissions from the transfer of the produced asphaltic concrete into the storage silo shall not exceed any of the following limits: 0.00118 pounds of CO per ton of asphaltic concrete silo transferred, 0.0085 pounds of VOC per ton of asphaltic concrete transferred, or 0.000029 pounds of PM₁₀ per ton of asphaltic concrete transferred. [District Rule 2201]
35. Emissions from truck loading of asphaltic concrete shall not exceed any of the following limits: 0.00135 pounds of CO per ton of asphaltic concrete loaded, 0.0029 pounds of VOC per ton of asphaltic concrete loaded, or 0.000026 pounds of PM₁₀ per ton of asphaltic concrete loaded. [District Rule 2201]
36. Source testing to demonstrate compliance with the particulate matter emissions concentration (grains/dscf) and particulate matter emission rate (lb/ton) from the exhaust stack of the baghouse serving the drum dryer/mixer shall be conducted within 60 days of achieving maximum production rate but no longer than 180 days after initial startup. [District Rule 4001 and 40 CFR §60.8(a)]
37. Source testing to measure NO_x and CO emissions from this unit shall be conducted within 60 days of achieving maximum production rate but no longer than 180 days after initial startup and at least once every 24 months thereafter. [District Rules 2201 & 4309]
38. {3722} All test results for NO_x and CO shall be reported in ppmv @ 19% O₂ (or no correction if measured above 19% O₂), corrected to dry stack conditions. [District Rule 4309]
39. {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
40. Source testing to measure NO_x and CO emissions from the asphaltic concrete batch plant shall be conducted utilizing one of the following options: (a). Test the unit using locally mined aggregate in the dryer. If the source test using locally minded aggregate fails, the operator may re-run the source test using aggregate from a different source.; (b). Test the unit using aggregate from a source different from the source used during normal operations.; (c). Test the unit using a heat-absorbing material in the dryer, but no aggregate.; (d). Test the unit with no material in the dryer. [District Rule 4309]
41. {109} Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
42. {3718} NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis. [District Rule 4309]
43. {3719} CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 4309]
44. {3720} Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 4309]
45. {3713} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4309. [District Rule 4309]

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46. {3715} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 4309]
47. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month in which asphalt is produced on at least five days or for at least 32 hours, whichever comes first (and in which a source test is not performed), using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 production days of restarting the unit unless monitoring has been performed within the last month. [District Rule 4309]
48. {3742} If either the NO_x or CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rule 4309]
49. {3743} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rule 4309]
50. {3744} The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 19% O₂ (or no correction if measured above 19% O₂), (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4309]
51. A daily log shall be maintained and shall include the following: (a). Total quantity of aggregate processed (in tons); (b). Total quantity of RAP/RAS processed (in tons); (c). Total storage area (in acres) of the aggregate stockpiles; (d). Total storage area (in acres) of the RAP/RAS stockpiles; (e). Total quantity of asphaltic concrete produced (in tons); (f). Total quantity of asphaltic concrete transferred into the storage silo (in tons); (g). Total quantity of asphaltic concrete loaded into trucks (in tons); (h). Type and quantity of fuel consumed in the drum dryer/mixer (in scf of natural gas). [District Rules 1070 & 2201]
52. The permittee shall maintain a record of the cumulative annual amount of asphaltic concrete produced, transferred into the storage silo, and loaded into trucks. The cumulative total shall be updated at least monthly. [District Rule 1070 & 2201]
53. The permittee shall maintain a record of the cumulative annual heat input to the drum dryer/mixer. The cumulative total shall be updated at least monthly. The heat input can be determined by multiplying the amount of fuel burned by its corresponding heating value (natural gas = 1,000 Btu/scf). [District Rules 1070 & 2201]
54. {3246} All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rule 1070]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: C-8476-2-1

LEGAL OWNER OR OPERATOR: VULCAN MATERIAL COMPANY
MAILING ADDRESS: 11599 OLD FRIANT ROAD
FRESNO, CA 93730

LOCATION: 3570 WEST ASHLAN AVE
FRESNO, CA

EQUIPMENT DESCRIPTION:

RECLAIM ASPHALT PAVEMENT (RAP) AND RECYCLED ASPHALT SHINGLES (RAS) RECEIVING AND STORAGE; TWO RAP BINS EACH WITH A FEED BELT CONVEYOR; ONE AGGREGATE COLLECTING CONVEYOR FEEDING A VIBRATING SCREEN SERVED BY A BAGHOUSE; AND A DRUM MIXER FEED CONVEYOR; AND A PERMIT EXEMPT OIL HEATER (NATURAL GAS FIRED, 2 MMBTU/HR OR LESS)

CONDITIONS

1. This Authority to Construct (ATC) cancels and supersedes ATC C-8476-2-0. [District Rule 2201]
2. All recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) truck unloading transfer points shall be equipped with spray nozzles installed and maintained in proper working condition at all times. [District Rule 2201]
3. All recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) conveyor transfer points shall be equipped with spray nozzles installed and maintained in proper working condition at all times. [District Rule 2201]
4. All recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) bins shall be equipped with spray nozzles installed and maintained in proper working condition at all times. [District Rule 2201]
5. The recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) screen shall be equipped with spray nozzles installed and maintained in proper working condition at all times. [District Rule 2201]
6. All spray nozzles shall be operated in such a manner to limit visible dust emissions and maintain moisture content in accordance with the requirements of this permit. [District Rule 2201]
7. The moisture content of recycled asphalt pavement received at the recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) handling operation shall be maintained at 2% or greater, by weight. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

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DAVID WARNER, Director of Permit Services
C-8476-2-1 May 2 2013 2:34PM - MASLOWST Joint Inspection NOT Required

8. The moisture content of recycled asphalt pavement stored in the recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) stockpiles shall be maintained at 2% or greater, by weight. [District Rule 2201]
9. The quantity of aggregate (listed on permit unit C-8476-2) and recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) processed shall not exceed 5,640 tons in any one day and 470,000 tons in any one calendar year. [District Rule 2201]
10. The PM10 emissions rate from each recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) transfer emissions point including; aggregate truck unloading, bin loading, bin unloading, and conveyor transfer points shall not exceed 0.000046 lb-PM10/ton-RAP. [District Rule 2201]
11. The PM2.5 emissions rate from each recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) transfer emissions point including; aggregate truck unloading, bin loading, bin unloading, and conveyor transfer points shall not exceed 0.000013 lb-PM2.5/ton-RAP/RAS. [District Rule 4102]
12. The PM10 emissions rate from recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) aggregate screening shall not exceed 0.00000074 lb-PM-10/ton-RAP/RAS. [District Rule 2201]
13. The PM2.5 emissions rate from recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) aggregate screening shall not exceed 0.0000005 lb-PM-2.5/ton-RAP/RAS. [District Rule 2201]
14. Visible emissions from the baghouse serving the aggregate screen shall not equal or exceed 5% opacity for a period or periods aggregating more than three minutes in any one hour [District Rule 2201]
15. The exhaust stack of the baghouse shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (a flapper type rain cap is acceptable), roof overhang, or any other obstruction. [District Rule 4102]
16. The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201]
17. The differential pressure gauge reading range shall be established per manufacturer's recommendation at time of start up inspection. [District Rule 2201]
18. Replacement bags numbering at least 10% of the total number of bags in the largest baghouse using each type of bag shall be maintained on the premises. [District Rule 2201]
19. Material removed from the baghouse shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
20. The baghouse cleaning frequency and duration shall be adjusted to optimize the control efficiency. [District Rule 2201]
21. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
22. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
23. Moisture content of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) received at the recycled asphalt pavement receiving and storage operation shall be measured on monthly basis and when requested by the District. [District Rule 2201]
24. Moisture content of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) processed at the recycled asphalt pavement handling operation shall be measured on monthly basis and when requested by the District. [District Rule 2201]
25. The percent moisture of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) received at the recycled asphalt pavement receiving and storage operation shall be determined by weighing an approximately 2-lb sample of freshly received aggregate, bringing the sample to dryness in a drying oven, then weighing the dried sample. The weight difference is the moisture content. [District Rule 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

26. The percent moisture of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS), processed at the recycled asphalt pavement handling operation, shall be determined by weighing an approximately 2-lb sample of aggregate processed through the transfer conveyor, from the aggregate bin to the aggregate screen, bringing the sample to dryness in a drying oven, then weighing the dried sample. The weight difference is the moisture content. [District Rule 2201]
27. {3443} When handling bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, wind barriers with less than 50% porosity shall also be used. [District Rules 8011 and 8031]
28. {3444} When storing bulk materials outside an enclosed structure or building, water or chemical/organic stabilizers/suppressants shall be applied as required to limit Visible Dust Emissions to a maximum of 20% opacity. When necessary to achieve this opacity limitation, all bulk material piles shall also be either maintained with a stabilized surface as defined in Section 3.58 of District Rule 8011, or shall be protected with suitable covers or barriers as prescribed in Table 8031-1, Section B, of District Rule 8031. [District Rules 8011 and 8031]
29. {3445} When transporting bulk materials outside an enclosed structure or building, all bulk material transport vehicles shall limit Visible Dust Emissions to 20% opacity by either limiting vehicular speed, maintaining sufficient freeboard on the load, applying water to the top of the load, or covering the load with a tarp or other suitable cover. [District Rules 8011 and 8031]
30. {3446} All outdoor chutes and conveyors shall be controlled by any of the following options: 1) full enclosure, 2) operation with water spray equipment that sufficiently wets materials to limit VDE to 20% opacity, or 3) the concentration of particles having an aerodynamic diameter of 10 microns or less in the conveyed material shall be sufficiently small to limit VDE to 20% opacity. [District Rules 8011 and 8031]
31. {3447} An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/04) or Rule 8011(8/19/04). [District Rules 8011 and 8041]
32. {3448} Where dusting materials are allowed to accumulate on paved surfaces, the accumulation shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071]
33. {3438} Water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]
34. {3450} Whenever any portion of the site becomes inactive, permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8011 and 8071]
35. {3451} Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8011, 8031, and 8071]
36. Records of monthly moisture content of recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) processed at the recycled asphalt pavement handling operation shall be maintained. [District Rules 1070 and 2201]
37. Records of daily amount of recycled asphalt pavement processed at the recycled asphalt pavement (RAP) and Recycled Asphalt Shingles (RAS) handling operation shall be maintained. [District Rules 1070 and 2201]
38. {3465} Records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 2201]

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Appendix B

GHG Calculations

125 MMBtu/hour Boiler

Basis and Assumptions

- The boiler is fired with natural gas at a rate of 125 MMBtu/hour (HHV)
- The boiler operates 8,760 hours per year and is in commercial/institutional service
- Emission factors and global warming potentials (GWP) are taken from the 40 CFR Part 98 (Tables C.1 and C.2):

CO₂ 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)

CH₄ 0.005 kg/MMBtu (HHV) natural gas (0.011 lb/MMBtu)

N₂O 0.0001 kg/MMBtu (HHV) natural gas (0.00022 lb/MMBtu)

GWP for CH₄ = 21 lb-CO₂(eq) per lb-CH₄

GWP for N₂O = 310 lb-CO₂(eq) per lb-N₂O

Calculations

Hourly Emissions

CO₂ Emissions = 125.0 Btu/hr x 116.7 lb/Btu = 14,587.5 lb-CO₂(eq)/hour

CH₄ Emissions = 125.0 Btu/hr x 0.011 lb/Btu x 21 lb-CO₂(eq) per lb-CH₄ = 28.9 lb-CO₂(eq)/hour

N₂O Emissions = 125.0 Btu/hr x 0.00022 lb/Btu x 310 lb-CO₂(eq) per lb-N₂O = 8.5 lb-CO₂(eq)/hour

Total = 14,587.5 + 28.9 + 8.5 = 14,625 lb-CO₂(eq)/hour

Annual Emissions

14,625 lb-CO₂(eq)/hour x 8,760 hr/year ÷ 2,000 lb/ton = **64,058 tons-CO₂(eq)/year**

Appendix C

BACT Guideline 6.3.1 and Top-Down BACT Analysis

[Per » B A C T » Bact Guideline.asp?category Level1=6&category Level2=3&category Level3=1&last Update=5 » 21](#) :

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**Best Available Control Technology (BACT) Guideline 6.3.1
Last Update: 5/21/2001**

**Asphaltic Concrete - Drum Mix Plant, = or > 2,000 ton/day or = or > 75.6
MMBtu/hr burner**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Natural gas or LPG as a primary fuel.		
NOx	0.088 lb/MMBtu Low-NOx burner and either natural gas or LPG as the primary fuel.		
PM10	99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed conveyors; hot mix storage silos enclosed all vent to oil mist collectors; and natural gas or LPG as a primary fuel.	99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed drag slat conveyor; hot mix storage silos and truck loadout enclosed on two sides; all vent to blue smoke control comprised of electrostatic precipitator or filter pack; and natural gas or LPG as a primary fuel.	
SOx	PUC quality natural gas or LPG as a primary fuel.		
VOC	Natural gas or LPG as a primary fuel; and enclosed hot mix silos and loadout operation vented to the rotary-dryer burner.	Enclosed hot mix silos and loadout operation vented to an afterburner.	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on [Details Page](#).

Top Down BACT Analysis for PM10 Emissions:

Step 1 - Identify All Possible PM10 Control Technologies

According to District BACT Guideline 6.3.1 (Asphaltic concrete drum mix plants with a process rate of $\geq 2,000$ tons/day or drum dryer with a burner rating of ≥ 75.6 MMBtu/hr), the following are possible controls for VOC emissions:

Achieved-in-Practice:

99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed conveyors; hot mix storage silos enclosed all vent to oil mist collectors; and natural gas or LPG as primary fuel.

Technologically Feasible:

99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed drag slat conveyor; hot mix storage silos and truck loadout enclosed on two sides; all vent to blue smoke control comprised of electrostatic precipitator or filter pack; and natural gas or LPG as primary fuel.

Alternate Basic Equipment:

None identified.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options identified for asphalt concrete drum mix plants.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1st 99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed drag slat conveyor; hot mix storage silos and truck loadout enclosed on two sides; all vent to blue smoke control comprised of electrostatic precipitator or filter pack; and natural gas or LPG as primary fuel (Technologically Feasible)

2nd 99% control efficiency (Rotary drum vents to fabric collector or Venturi scrubber with centrifugal separator) and enclosed conveyors; hot mix storage silos enclosed all vent to oil mist collectors; and natural gas or LPG as primary fuel. (Achieved-In-Practice).

Step 4 - Cost Effectiveness Analysis

A cost analysis is not required since the applicant is proposing the highest ranking control effectiveness

Step 5 - Select BACT

The applicant will meet “technologically feasible” BACT by venting the hot mix silo and loadout operation to the rotary drum dryer burner for to a blue smoke filter pack, a bag house with 99% control and use of natural gas as the primary fuel.

Top Down BACT Analysis for NOx Emissions:

Step 1 - Identify All Possible NOx Control Technologies

According to District BACT Guideline 6.3.1 (Asphaltic concrete drum mix plants with a process rate of $\geq 2,000$ tons/day or drum dryer with a burner rating of ≥ 75.6 MMBtu/hr), the following are possible controls for VOC emissions:

Achieved-in-Practice:

0.088 lb/MMBtu Low_NOx burner and either natural gas or LPG as the primary fuel.

Technologically Feasible:

Non identified

Alternate Basic Equipment:

None identified.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options identified for asphalt concrete drum mix plants.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Achieved in practice BACT of Low NOx burner and natural gas or LPG as the primary fuel

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant will meet "Achieved-In-Practice" BACT by use of a Low NOx burner and natural gas as the primary fuel.

Top Down BACT Analysis for SOx Emissions:

Step 1 - Identify All Possible SOx Control Technologies

According to District BACT Guideline 6.3.1 (Asphaltic concrete drum mix plants with a process rate of $\geq 2,000$ tons/day or drum dryer with a burner rating of ≥ 75.6 MMBtu/hr), the following are possible controls for VOC emissions:

Achieved-in-Practice:

either natural gas or LPG as the primary fuel.

Technologically Feasible:

Non identified

Alternate Basic Equipment:

None identified.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options identified for asphalt concrete drum mix plants.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Achieved in practice BACT of natural gas or LPG as the primary fuel

Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant will meet "Achieved-In-Practice" BACT by use of a natural gas as the primary fuel.

Top Down BACT Analysis for VOC Emissions:

Step 1 - Identify All Possible VOC Control Technologies

According to District BACT Guideline 6.3.1 (Asphaltic concrete drum mix plants with a process rate of $\geq 2,000$ tons/day or drum dryer with a burner rating of ≥ 75.6 MMBtu/hr), the following are possible controls for VOC emissions:

Achieved-in-Practice:

Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to the rotary drum dryer burner.

Technologically Feasible:

Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to an afterburner.

Alternate Basic Equipment:

None identified.

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options identified for asphalt concrete drum mix plants.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 1st Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to an afterburner. – 98%⁽¹⁶⁾. (Technologically Feasible)
- 2nd Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to the rotary drum dryer burner. – 30%⁽¹⁷⁾. (Achieved-In-Practice).

Step 4 - Cost Effectiveness Analysis

Cost Effective Threshold:

The District's BACT Policy establishes annual cost thresholds for imposed control based upon the amount of pollutants abated by the controls. If the cost of control is at or below the threshold, the control is considered cost effective. If the cost exceeds the threshold, it is not cost effective and the control is not required. The cost effective threshold for VOC is \$5,000/ton.

Industry Standard Emissions:

Industry standard emissions are considered to be what is available to the industry as standard equipment. For asphaltic concrete manufacturing plants, the industry standard is to not use

¹⁶ OAQPS Control Cost Manual, 4th Edition, EPA 450/3-90-006, January 1990, page 3-8.

¹⁷ Referenced from the BACT Analysis section of the application review for Project #N-1010128 (ATC Permit N-4473-3-0).

any type of VOC capture and control equipment. The uncontrolled Industry Standard Emissions (ISE) will be calculated based on the applicant's proposed annual processing rate limit and the uncontrolled emission factors for silo filling and truck loadout as indicated in Section VII.B. of this document. Therefore:

Processing Rate: 500,000 ton/year
EF_{VOC/Silo Filling (Uncontrolled)}: 0.0122 lb-VOC/ton
EF_{VOC/Loadout (Uncontrolled)}: 0.00416 lb-VOC/ton

$$\begin{aligned} \text{Annual ISE}_{\text{VOC}} &= \text{Processing Rate (ton/year)} \times [\text{EF}_{\text{VOC/Silo Filling (Uncontrolled)}} \text{ (lb/ton)} \\ &\quad + \text{EF}_{\text{VOC/Loadout (Uncontrolled)}} \text{ (lb/ton)}] \\ &= 500,000 \text{ ton/year} \times [0.0122 \text{ lb-VOC/ton} + 0.00416 \text{ lb-VOC/ton}] \\ &= 8,180 \text{ lb-VOC/year} \end{aligned}$$

1st Most Effective Control Option:

Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to an afterburner. – 98% Control Efficiency.

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and incinerator destruction efficiency of 98%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned} \text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{VOC}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 8,180 \text{ lb/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.98 \\ &= \mathbf{3.2 \text{ ton/year}} \end{aligned}$$

(B). Annualized Capital Investment to Purchase and Install an Afterburner:

The following capital cost estimate for an afterburner serving the proposed asphaltic concrete storage silos and truck loadout were provided by the applicant's consultant Justice & Associates and submitted to the District on 12/30/08.

Equipment Cost = \$540,987
Taxes (8% of equipment cost) = \$43,278.96
Installation Cost = \$50,000
Shipping Costs = \$14,000

$$\begin{aligned} \text{Total Capital Investment} &= \text{Equipment Cost} + \text{Taxes} + \text{Installation Cost} \\ &\quad + \text{Shipping Costs} \\ &= \$540,987 + \$43,278.96 + \$50,000 + \$14,000 \\ &= \$648,266 \end{aligned}$$

Pursuant to District Policy APR 1305, section X. (11/09/99), the annual cost of the afterburner system will be calculated as follows. The cost will be spread over the expected life of the incineration system, which is estimated at 10 years and using the capital recovery equation (Equation 1). A 10% interest rate is assumed in the equation and the assumption will be made that the equation has no salvage value at the end of the ten-year cycle.

$$\text{Equation 1: } ACI = [P \times i(1+i)^n] / [(1+i)^n - 1]$$

Where: ACI = Annualized Capital Investment
 P = Present Value
 I = Interest Rate (10%)
 N = Equipment Life (10 years)

$$ACI_{\text{Afterburner}} = [\$648,266 \times 0.1(1.1)^{10}] / [(1.1)^{10} - 1] = \mathbf{\$105,502/\text{year}}$$

(C). Cost Effectiveness of an Afterburner:

$$\begin{aligned} \text{Cost Effectiveness}_{\text{Afterburner}} &= \text{Annualized Capital Investment (\$/year)} \\ &\quad \div \text{Annual Emission Reduction (ton/year)} \\ &= \$105,502/\text{year} \div 3.2 \text{ ton VOC/year} \\ &= \mathbf{\$32,969/\text{ton}} \end{aligned}$$

The cost effectiveness of utilizing an afterburner to capture and control VOC emissions is greater than the VOC cost effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is not cost effective and is being removed from consideration at this time.

2nd Most Effective Control Option:

Use of natural gas or LPG as a primary fuel and enclosed hot mix silos and loadout operation vented to the rotary drum dryer burner. – 30% Control Efficiency.

The applicant is proposing to utilize natural gas as a primary fuel and enclosed hot mix silos and loadout operation vented to the rotary drum dryer burner. Therefore, the applicant is proposing this control option and a cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant will meet “Achieved-In-Practice” BACT by venting the hot mix silo and loadout operation to the rotary drum dryer burner for VOC emissions control.

Appendix D

Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

$QNEC = PE2 - PE1$, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

Quarterly NEC [QNEC] C-8476-1-1			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	1125	0	1125
SO _x	425	0	425
PM ₁₀	385	0	385
CO	8816	0	8816
VOC	2425	0	2425

Quarterly NEC [QNEC] C-8476-2-1			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	0	0

Appendix E

Risk Management Review and AAQA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Thom Maslowski – Permit Services
 From: Yu Vu – Technical Services
 Date: April 13, 2012
 Facility Name: Vulcan Material Company
 Location: 3570 W. Ashlan Ave, Fresno, CA
 Application #(s): C-8476-1-1 and -2-1
 Project #: C-1130861

A. RMR SUMMARY

RMR Summary			
Categories	Asphalt Drum Dryer and Loadout w/Recycled Asphalt Receiving and Handling (Units 1-1)	Project Totals	Facility Totals
Prioritization Score	125.35	125.35	250.63
Acute Hazard Index	0.27	0.27	0.41
Chronic Hazard Index	0.09	0.09	0.18
Maximum Individual Cancer Risk (10 ⁻⁶)	1.92	1.92	3.89
T-BACT Required?	Yes		
Special Permit Conditions?	Yes		

*Numbers may not add up due to rounding

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 1-1

1. The exhaust stacks from the baghouse and blue smoke filter pack shall vent vertically upward. Their vertical exhaust flows shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
2. The combined processing rate of cold feed aggregate and RAP/RAS for the drum mixer/dryer shall not exceed the following limits: 6,000 tons/day and 500,000 tons/yr. [District Rules 2201]
3. The combined processing rate of cold feed aggregate and RAP/RAS for the filling and loadout of the asphaltic concrete storage silo shall not exceed the following limits: 7,500 tons/day and 500,000 tons/yr. [District Rules 2201]
4. The PM₁₀ emissions for the stockpiles shall not exceed 0.9 lb/day and 310 lb/year. [District Rules 2201]

5. The $PM_{2.5}$ emissions for the stockpiles shall not exceed 0.0465 lb/day and 16.9725 lb/year. [District Rules 2201]
6. The PM_{10} emissions for the conveyors shall not exceed 2.60 lb/day and 217 lb/year. [District Rules 2201]
7. The $PM_{2.5}$ emissions for the conveyors shall not exceed 0.74 lb/day and 61.34 lb/year. [District Rules 2201]
8. The combined processing rate of cold feed aggregate and RAP/RAS for the conveyors shall not exceed the following limits: 5,640 tons/day and 470,000 tons/yr. [District Rules 2201]

T-BACT is required for this unit because of emissions of hexavalent chromium and formaldehyde which are a PM-10 and VOC, respectively. In accordance with District policy, BACT for this unit will be considered to be T-BACT.

B. RMR REPORT

I. Project Description

Technical Services received a request on March 29, 2013, to perform a Risk Management Review for a proposed installation of a hot mix asphaltic concrete manufacturing plant. The plant consists of one natural gas-fired drum dryer/mixer (controlled by a baghouse), an asphalt concrete storage silo with loadout (controlled by blue smoke filter pack), stockpiles, and conveyors. The plant is capable of handling cold feed aggregate, recycled asphalt pavement (RAP), and recycled asphalt shingles (RAS). Per the engineer, all risks and hazard indices will be assigned to unit C8476-1-1.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using emissions provide by the applicant and engineer and the District's "Aggregate," "Asphalt Plant Drum Mix Hot Mix," and "Asphalt-Storage for Loadout Silos" spreadsheets were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2011 from Fresno to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 1-1 (Baghouse)			
Source Type	Point	Location Type	Urban
Stack Height (m)	12.192	Closest Receptor (m)	25
Stack Diameter. (m)	1.423	Type of Receptor	Residential
Stack Exit Velocity (m/s)	28.441	Max Hours per Year	8760
Stack Exit Temp. (°F)	325	Fuel Type	NG
Burner Rating (MMBtu/hr)	125		

Analysis Parameters Unit 1-1 (Loadout)			
Source Type	Point	Location Type	Urban
Stack Height (m)	19.812	Closest Receptor (m)	25
Stack Diameter. (m)	1.219	Type of Receptor	Residential
Stack Exit Velocity (m/s)	34.36	Max Hours per Year	8760
Stack Exit Temp. (°F)	312.01		

Analysis Parameters Unit 1-1 (Stockpiles)			
Source Type	Area	Location Type	Urban
Area (m ²)	14,118.3	Closest Receptor (m)	25
Release Height (m)	3.81	Type of Receptor	Residential
Emission Rate (g/sec-m ²)	7.08E-05	Pollutant Type	PM ₁₀ /PM _{2.5}

Analysis Parameters Unit 1-1 (Conveyors)			
Source Type	Area	Location Type	Urban
Area (m ²)	2,940.1	Closest Receptor (m)	25
Release Height (m)	3.81	Type of Receptor	Residential
Emission Rate (g/sec-m ²)	3.4E-04	Pollutant Type	PM ₁₀ /PM _{2.5}

AAQA. In addition to the RMR, Technical Services performed modeling for the criteria pollutants PM₁₀ and PM_{2.5} using AERMOD. PM₁₀ and PM_{2.5} were measured against the interim District thresholds for fugitive dust sources since the majority of impact was determined to come from fugitive sources within the project. This evaluation includes all PM₁₀ and PM_{2.5} emissions from the project. The PM₁₀ and PM_{2.5} emission rates used in the analysis may be seen in the following table:

PM Emissions Rates Used for AAQA Analysis				
Unit	PM ₁₀ Emissions (lb/hr)	PM ₁₀ Emissions (lb/yr)	PM _{2.5} Emissions (lb/hr)	PM _{2.5} Emissions (lb/yr)
Baghouse	0.49	985	0.49	985
Loadout/Silo	0.02	28	0.02	28
Stockpiles	0.90	310	0.0465	16.9725
Conveyors	2.60	217	0.74	61.34

The results from the Criteria Pollutant Modeling are as follows:

PM₁₀ Pollutant Modeling Results (Values are in µg/m³)*

Category	PM ₁₀		PM _{2.5}	
	24 Hours	Annual	24 Hours	Annual
Proposed Project	9.63	0.99	2.05	0.15
Interim Significance Level ¹	10.4	2.08	2.5	0.63
Result	Pass ²	Pass ²	Pass ²	Pass ²

¹The District has decided on an interim basis to use these thresholds for fugitive dust sources for the 24-hour and Annual average concentrations.

²The PM₁₀ and PM_{2.5} concentrations are below the District's interim thresholds for fugitive dust sources.

Technical Services also performed modeling for criteria pollutants CO, NO_x, and SO_x. This evaluation only includes non-PM emissions from Unit 1-1 since Unit 2-1 only had PM emissions, which were evaluated in the previous table against the District's interim thresholds for fugitive sources (along with the PM emissions from Unit 1-1). The emission rates used for modeling the baghouse were 17.0 lb/hr CO, 2.25 lb/hr NO_x, and 0.85 lb/hr SO_x. The emission rate used for modeling the loadout was 0.83 lb/hr CO.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	N/A ²	N/A ²
PM _{2.5}	X	X	X	N/A ²	N/A ²

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

²These criteria pollutants were evaluated in the preceding table and are below the District's interim thresholds for fugitive dust sources.

III. Conclusion

The acute and chronic indices are below 1.0 for this project. The cancer risk associated with Unit C-8476-1-0 is greater than 1.0 in a million, but less than 10 in a million. The cancer risk associated with Unit C-8476-2-0 is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for Unit C-8476-1-0.**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.