Notice of Construction (NOC) Worksheet

pscleanair.org
Puget Sound Clean Air Agency

Applicant: Cadman Materials, Inc.	**NOC Number**: 11812
Project Location: 222 W Marine View Drive, Everett, WA 98201	**Registration Number**: 18019
Applicant Name and Phone: Christy McDonough, (425) 698-3226	**NAICS:** 324121
Engineer: Courtney Shernan (formerly O'Gorman)	**Inspector**: Tom Hudson

A. DESCRIPTION

For the Order of Approval:
Replacement of equipment at an existing, completely enclosed asphalt plant consisting of: one (1) new H&R drum mixer (400 tons/hr) with a 125 MMBtu/hr burner and four existing asphalt storage silos (200 tons each) controlled by an existing H&R Mechanical Pulse Jet 806-6-12 baghouse (80,000 cfm); six raw material (sand and aggregate) belt conveyors; five aboveground liquid asphalt storage tanks (one 25,700 gallon; two 12,000 gallon, one 10,200 gallon, and one 30,000 gallon); and reclaimed asphalt pavement (RAP) and recycled asphalt shingle (RAS) feeding equipment, including a RAP feed bin (160 ton/hr), RAS feed bin (20 ton/hr), and associated conveyors.

Additional Information:

Facility

Cadman Materials, Inc. (Cadman) currently operates a hot mix asphalt plant at the project location (the North Everett plant). The plant consists of the following equipment:

- One Hauck 115 MMBtu/hr burner for an asphalt rotary dryer and a pug mill mixer (400 tons/hr) controlled by a Mechanical Pulse Jet 806-6-12 baghouse (86,000 cfm).
- Six raw material (sand and aggregate) belt conveyors.
- Five aboveground liquid asphalt storage tanks (one 25,700 gallon; two 12,000 gallon, one 10,200 gallon; and one 30,000 gallon).
- Four asphalt storage silos (200 tons each).
- One aboveground diesel storage tank (3,900 gallons).
- Reclaimed asphalt pavement (RAP) feeding equipment.

Proposed Equipment/Activities

Cadman is proposing to replace the existing dryer and mixer at the North Everett plant with a single counterflow drum mixer, which will be controlled by the existing H&R Mechanical Pulse Jet 806-6-12 baghouse (80,000 cfm). Cadman is also proposing to add new ducting to route emissions from the asphalt storage silos to the H&R Mechanical Pulse Jet 806-6-12 baghouse.

The use of RAP at the facility is currently limited to 15%, per Condition 5 of Order of Approval No. 6643. Cadman is proposing to increase the RAP ratio in the feed (up to 40%) and to add the ability to use recycled asphalt shingles (RAS, up to 5%). The project includes the following:

- Relocation of the existing RAP feeding equipment;
- Installation of new RAS feeding equipment; and
- Installation of new RAP and RAS feed bins and associated conveyors.

It was determined that the facility's potential emissions are greater than the major source threshold (100 tpy of a criteria pollutant, in this case CO). Because of this, a federally enforceable synthetic minor limit was requested by the facility. The federally enforceable synthetic minor limit requires a Public Notice.

Permit History

The existing hot mix asphalt plant with one Hauck 115 MMBtu/hr rotary dryer is currently permitted under Order of Approval No. 6643. This Order of Approval will cancel and supersede Order of Approval No. 6643, dated September 12, 1996.

B. DATABASE INFORMATION

Source:
18019 - Cadman Materials, Inc. (Cadman)

Basic Equipment
Count: 6

Reg	Name	I...	NC/Notifi...	BE Code	Year I...	Units...	Rated Capa...	Rated Units	NOC Not...	Comments
18019	Cadman Ma...	1	6643	4 - asphalt batch plan...	1995	1	400.00	Ton/Hr		(TO BE REMOVED) W/Hauck Asphalt Rotary Dryer Rated At 115 Mmbtu/Hr
18019	Cadman Ma...	2	11812	17 - conveyor/elevato...	1995	1				6 raw material (sand and aggregate) belt conveyors
18019	Cadman Ma...	3	11812	60 - storage silo/bin	1995	1				Fve aboveground liquid asphalt storage tanks (one 25,700 gallon; two 12,000 gallon,
18019	Cadman Ma...	4	11812	4 - asphalt batch plan...	2019	1	400.00	Ton/Hr		H&R 10x47 rotary dryer (125 MMBtu/hr)
18019	Cadman Ma...	5	11812	60 - storage silo/bin	1995	4	200.00	Ton		Four asphalt storage silos (200 tons each). Previously permitted under Order of Appr
18019	Cadman Ma...	6	11812	17 - conveyor/elevato...	2019	1	180.00	Ton/Hr		RAP/RAS feeding equipment, including RAP feed bin (160 ton/hr), RAS feed bin (20 t

Comment: H&R 10x47 rotary dryer (125 MMBtu/hr)

Control Equipment
Count: 1

Reg	Name	Item #	NC/Notification #	CE Code	Year Installed	Unit...	Rated Capa...	NOC Not Required	Comments
18019	Cadman Ma...	1	11812	100 - Baghouse	1995	1	80000.00		Mechanical Pulse Jet 806-6-12 Controls dust from silos, dryer, and plant.

Comment: Mechanical Pulse Jet 806-6-12 Controls dust from silos, dryer, and plant.

New NSPS due to this NOCOA?	**No**	**Applicable NSPS: None**	**Delegated? N/A**
New NESHAP due to this NOCOA?	**No**	**Applicable NESHAP: None**	**Delegated? N/A**
New Synthetic Minor due to this NOCOA?	**Yes**		

Note: The facility was already subject to NSPS Subpart I prior to this Order.

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04. All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received (Date)
Filing Fee	$ 1,150	
Equipment (drum mixer, RAP/RAS feeding equipment)	$ 1,200	
Refined Dispersion Modeling Analysis Review	$ 1,000	
NSPS Subpart I	$ 1,000	
Public Notice	$ 700 + publication costs to be invoiced later	
Federally Enforceable Emission Limit	$ 2,000	
SEPA (DNS)	$ 800	
Filing received		$ 1,150 (5/24/2019)
Additional fee received		$ 6,700 (8/9/2019)
Total Remaining	**$ 0 (publication costs to be invoiced later)**	

Registration Fees:
Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07.

Applicability		
Regulation I	Description	Note
5.03(a)(1)	Facilities subject to federal emission standards (Title 40 CFR)	
5.03(a)(2)	Federally enforceable emission limit	
5.03(a)(6)	Facilities with particulate control equipment (>= 2,000 cfm)	
5.03(a)(8)(A)	Facilities with asphalt batch operations	
Annual Registration Fee		
Regulation I	Description	Fee
5.07(c)	Base Registration Fee	$ 1,150
5.07(c)(1)	40 CFR 60 Subpart I	$ 2,100
5.07(c)(2)	Federally Enforceable Emission Limit	$ 2,300
	Total =	$ 5,550

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

PSCAA is the SEPA lead agency for this project. The applicant submitted a completed Environmental checklist that is included below.

SEPA checklist v4.0.pdf

The City of Everett was consulted for comments on July 3, 2019, and Karen Stewart replied that there are no additional land use permits anticipated for the proposed replacement of equipment for the existing asphalt plant that would trigger a local SEPA review.

RE Request for Input on SEPA - Cadn

Based on the proposed action and the information in the checklist, the project will not: adversely affect environmentally sensitive or special areas, or endangered or threatened species; conflict with local, state, or federal laws or requirements for the protection of the environment, or establish a precedent for future actions with significant effects. This proposal is not likely to have a probable significant adverse environmental impact, and I recommend the issuance of a Determination of Non-Significance with no public comment. The DNS covers the scope of the project being reviewed for this Order of Approval: replacement of the existing dryer and mixer with a single counterflow drum mixer and installation of new RAP and RAS feeding equipment.

E. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REVIEW

Best Available Control Technology (BACT)

New stationary sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, “an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under Chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant.”

An emissions standard or emissions limitation means “a requirement established under the Federal Clean Air Act or Chapter 70.94 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the Federal Clean Air Act or Chapter 70.94 RCW.”

Best Available Control Technology for Toxics (tBACT)

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP."

BACT for Asphalt Dryer/Mixer

Particulate Matter

Similar Permits or Other Regulatory Agencies BACT for PM:

Source	Description	PM BACT
PSCAA Order No. 10462 (December 2012)	New hot mix asphalt plant including: Astec Counter Flow, Double Barrel Dryer (400 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 10852 (April 2015)	New hot mix asphalt (HMA) plant (325 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11175 (November 2016)	New hot mix asphalt (HMA) plant (300 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11274 (May 2017)	Replacement of an existing pug mill with a rotary mixer (350 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11328 (January 2018)	Replacement of the drum dryer at an existing continuous/batch Asphalt Plant.	0.027 gr/dscf (total), corrected to 7% O_2 0.014 gr/dscf (filterable), corrected to 7% O_2
PSCAA Order No. 11613 (September 2018)	Replacement of an existing pug mill with a rotary mixer (300 TPH)	0.027 gr/dscf (total), corrected to 7% O_2 0.014 gr/dscf (filterable), corrected to 7% O_2
Southwest Clean Air Agency 16-3199ADP	Replacement of parallel flow dryer/mixer with counterflow dryer/mixer (400 TPH)	0.010 gr/dscf (filterable), corrected to 15% O_2
Southwest Clean Air Agency 19-3335ADP	Replacement of existing batch tower (300 TPH) with a miniDrum asphalt mixer (500 TPH)	0.015 gr/dscf (filterable), corrected to 15% O_2
Bay Area Air Quality Management District BACT/TBACT Workbook	Hot Mix Asphalt, Drum and Batch Mix Facilities	0.01 gr/dscf (filterable)
MassDEP BACT Guideline	Hot Mix Asphalt – Batch Plants and Drum Mix Plants	0.01 gr/dscf

Analysis

The Agency historically established a total particulate BACT limit of 0.02 gr/dscf for asphalt plants, until Order No. 11328 was issued in January 2018. The Agency's historic 0.02 gr/dscf limit did not

include an oxygen correction, nor, apparently, does the BAAQMD limit shown in the table above. However, there is some concern that adding dilution air during an emission test could be used to demonstrate compliance with a limit; therefore, the Agency is setting future particulate limits using an oxygen correction factor, as first established in Order No. 11328. For consistency with Agency Regulation I, Section 9.09, the standard for correction chosen is seven percent oxygen.

The same approach that was used for Order No. 11328 is being used for this analysis. The Agency reviewed thirty-two asphalt plant particulate test results to determine what current BACT for particulate should be. This data was available from the Agency, SWCAA, and Northwest Clean Air Agency (NWCAA). This analysis is fully documented in the NOC worksheet for Order No. 11328.

The recommended BACT limit for filterable particulate is 0.014 gr/dscf corrected to 7% oxygen. The recommended BACT limit for total particulate is 0.027 gr/dscf corrected to 7% oxygen.

As on operational practice the Agency has also routinely set limits on the use of recycled asphalt pavement (RAP) and the use of recycled asphalt shingles (RAS) to the percentage of recycled material used for passing tests of particulate matter and visible emissions. The reason for this is that use of recycled materials has contributed to increased visible emissions and elevated particulate matter emissions when the recycled materials have impinged upon the burner flame.

Opacity

Every new asphalt mixer reviewed by the Agency since 2008 has had a 5 percent opacity limit, including most recently, Order No. 11328 (issued January 23, 2018) and Order No. 11613 (issued September 18, 2018). SWCAA has also issued a permit with a 5% opacity limit for asphalt plants. BACT for visible emissions from the mixer baghouse is emissions no greater than 5% opacity for three minutes in an hour per a Washington Department of Ecology Method 9A visual emissions test.

Volatile Organic Compounds

Similar Permits or Other Regulatory Agencies BACT for VOC:

SWCAA issued 16-3199ADP in 2016 for the replacement of an existing parallel flow aggregate drum dryer/mixer with a counterflow drum dryer/mixer. The BACT determination for the dryer/mixer includes a maximum product temperature of 315°F (mixing drum outlet) and establishes a numerical limit for VOC equal to the potential to emit for the dryer/mixer. The BAAQMD BACT Guideline lists a numerical VOC emission limit of 0.03 lb/ton for batch mix hot mix asphalt plants, and TCEQ's BACT guideline for hot mix asphalt plants lists a limit of 0.032 lb/ton. The MassDEP BACT Guideline also lists a VOC emission limit of 0.032 lb/ton.

Analysis

The Agency first set a limit on emissions of VOC from asphalt plant mixers with Order No. 11328. Order No. 11328 and Order No. 11613 include a VOC limit of 0.032 lb/ton, which is based on the AP-42 Chapter 11.1 VOC emission factor for drum mix hot mix asphalt plants, found in Table 11.1-8. For this application, the Agency is setting 0.032 lb/ton as the BACT emission rate. The VOC limit will be presented in terms of total hydrocarbon emissions expressed as propane as measured by Method

25A, with the option to subtract methane and other compounds with negligible photochemical activity.

Order No. 11328, Order No. 11613, and SWCAA establish maximum mix temperature operating conditions, since mix temperature has been tied to VOC emissions. The issue with limiting the maximum product temperature to 315°F, as used by SWCAA, is that this restricts the type of products able to be produced by the plant, which limits the market the plant could serve. Not only does a temperature limit reduce the number of products available, it also limits the area able to be served by the plant due to cooling of the asphaltic concrete while transporting it to the site of application. Consistent with Order No. 11328 and Order No. 11613, maximum mix temperature will be limited to the maximum recommended temperature for the mix as set by the manufacturer of the asphaltic cement used in the mix specification produced plus a 25°F buffer. Mix temperature will be required to be monitored hourly in a manner similar to that specified in the State of Washington Department of Ecology General Order for Portable and Stationary Hot Mix Asphalt Plants No. 10AQ-GO-01.

Carbon Monoxide

Similar Permits or Other Regulatory Agencies BACT for CO:

Source	Description	CO Limit	CO Limit (Corrected to 7% O_2)
PSCAA Order No. 10462 (December 2012)	New hot mix asphalt plant including: Astec Counter Flow, Double Barrel Dryer (400 TPH)	400.0 ppmvd (3% O_2)	310.6 ppmvd
PSCAA Order No. 10852 (April 2015)	New hot mix asphalt (HMA) plant (325 TPH)	400.0 ppmvd (3% O_2)	310.6 ppmvd
PSCAA Order No. 11175 (November 2016)	New hot mix asphalt (HMA) plant (300 TPH)	400.0 ppmvd (3% O_2)	310.6 ppmvd
PSCAA Order No. 11328 (January 2018)	Replacement of the drum dryer at an existing continuous/batch Asphalt Plant.	311.0 ppmvd (7% O_2)	310.6 ppmvd
Southwest Clean Air Agency 16-3199ADP	Replacement of parallel flow dryer/mixer with counterflow dryer/mixer (400 TPH)	163 ppmvd (15% O_2)	384 ppmvd
San Joaquin Valley APCD Rule 4309	Asphalt/Concrete Plants	42 ppmv (19.0% O_2)	307 ppmvd
San Joaquin Valley APCD BACT Guideline 6.3.1 (8/23/18)	Asphaltic Concrete – Mix Plant	42 ppmv (19% O_2)	307 ppmvd
Bay Area Air Quality Management District BACT/TBACT Workbook	Hot Mix Asphalt, Drum and Batch Mix Facilities	133 ppmvd (15% O_2)	313 ppmvd

Analysis

The applicant has proposed a CO BACT limit of 400 ppm corrected to 3% oxygen. The CO limit in Order of Approval No. 11328 is 311.0 ppmvd corrected to 7% oxygen (equivalent to 400 ppmvd at 3% oxygen). This value is also relatively consistent with the CO limit for asphalt plant aggregate dryers in San Joaquin Valley APCD Rule 4309 and BACT Guideline 6.3.1. San Joaquin Valley APCD Rule 4309 sets a CO limit of 42 ppmv corrected to 19% oxygen; the equivalent to 307 ppmv corrected to 7% oxygen. The Bay Area Air Quality Management District lists BACT as 133 ppm corrected to 15% oxygen, which equates to 313 ppmvd at 7% oxygen. This Order of Approval will establish a BACT limit of 311.0 ppmvd corrected to 7% oxygen, consistent with Order of Approval No. 11328.

Nitrogen Oxides

Similar Permits or Other Regulatory Agencies BACT for NO_x:

Source	Description	NO_x Limit	NO_x Limit (Corrected to 7% O_2)
PSCAA Order No. 10462 (December 2012)	New hot mix asphalt plant including: Astec Counter Flow, Double Barrel Dryer (400 TPH)	41.0 ppmvd (3% O_2)	31.8 ppmvd
PSCAA Order No. 10852 (April 2015)	New hot mix asphalt (HMA) plant (325 TPH)	41.0 ppmvd (3% O_2)	31.8 ppmvd
PSCAA Order No. 11175 (November 2016)	New hot mix asphalt (HMA) plant (300 TPH)	41.0 ppmvd (3% O_2)	31.8 ppmvd
PSCAA Order No. 11328 (January 2018)	Replacement of the drum dryer at an existing continuous/batch Asphalt Plant.	32.0 ppmvd (7% O_2)	32.0 ppmvd
Southwest Clean Air Agency 16-3199ADP	Replacement of parallel flow dryer/mixer with counterflow dryer/mixer (400 TPH)	27 ppmvd (15% O_2)	64 ppmvd
South Coast AQMD BACT Guideline	Asphalt Batch Plant	36 ppmvd (3% O_2)	28 ppmvd
San Joaquin Valley APCD Rule 4309	Asphalt/Concrete Plants	4.3 ppmv (19.0% O_2)	31.5 ppmvd
San Joaquin Valley APCD BACT Guideline 6.3.1 (8/23/18)	Asphaltic Concrete – Mix Plant	3.5 ppmv (19% O_2)	25.6 ppmvd
Bay Area Air Quality Management District BACT/TBACT Workbook	Hot Mix Asphalt, Drum and Batch Mix Facilities	12 ppmvd (15% O_2)	28 ppmvd

Analysis

The Agency historically set a BACT limit of 41 ppm corrected to 3% oxygen for asphalt dryers. For Order of Approval No. 11328, the NO_x limit was set to 32 ppm corrected to 7% oxygen (equivalent to

41 ppm corrected to 3% oxygen) to be consistent with the oxygen correction for the particulate matter limit.

South Coast AQMD, San Joaquin Valley APCD, and BAAQMD establish BACT limits for NO_x emissions from asphalt dryers. In the table above, I converted these to a 7% oxygen basis for the purpose of comparison. In August 2018, San Joaquin Valley APCD updated BACT guideline 6.3.1 and lists a NO_x limit of 3.5 ppmv at 19% oxygen. This is the most stringent limit listed in the table above and is equivalent to 25.6 ppmvd. Based on this value, this Order of Approval establishes a BACT limit of 26.0 ppmvd at 7% oxygen. Based on manufacturer emission estimates for the burner, it is expected that the burner will be able to meet this limit.

BACT for RAP/RAS Material Transfer Equipment

Particulate Matter

Similar Permits or Other Regulatory Agencies BACT for PM:

Source	Description	PM BACT
PSCAA Order No. 11613 (September 2018)	RAP feeder bin	No visible emissions
San Joaquin Valley APCD BACT Guideline 6.1.2 (7/31/18)	Recycled Asphalt Processing (Conveyors/Transfer Point)	Water sprays allowing visible emissions no greater than 7% opacity as measured using EPA Method 9
Bay Area Air Quality Management District BACT/TBACT Workbook	Asphalt Batch Plant (Material Handling)	• Enclosure of conveyors, transfer points, size reduction and classification equipment, and vent to baghouse w/ 0.01 gr/dscf. • Water spray w/ chemical suppressants of materials on conveyors, transfer points, storage piles, and site road surfaces.

Analysis

Since RAP and RAS are coated with asphalt cement, PM emissions from handling RAP and RAS are expected to be negligible. Crushed RAP material is actually used as a technique for controlling fugitive dust emissions at hot mix asphalt plants.[1] Therefore, I am proposing a BACT limit of no visible emissions from the RAP and RAS feeding equipment.

[1] "Preferred and Alternative Methods for Estimating Air Emissions from Hot-Mix Asphalt Plants", EPA Emission Inventory Improvement Program, July 1996.

F. EMISSION ESTIMATES

Proposed Project Emissions

Emissions of PM, VOC, CO, and NO_x are calculated based on the BACT limits presented in the previous section. Emissions of SO_2 and speciated HAP/TAP are calculated based on the AP-42 Chapter 11.1 emission factors for drum mix hot mix asphalt plants with a natural gas-fired dryer.

Since RAP/RAS is coated with asphalt cement, PM emissions from handling RAP/RAS are expected to be negligible. PM emissions from transferring this material were conservatively calculated using the drop equation in AP-42 Chapter 13.2.4.

Potential Emissions

The permitted potential to emit calculations are based on a maximum annual production of 350,000 tons of asphalt per year.

Source	VOC (tpy)	NO_x (tpy)	CO (tpy)	SO_2 (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Drum Mixer	5.60	22.26	99	0.60	33.18	21.14	19.59
RAP/RAS Feed Transfers	--	--	--	--	0.90	0.43	0.06
RAP/RAS Pile Emissions	--	--	--	--	0.69	0.33	0.05
Project Emissions	5.60	22.26	99	0.60	34.78	21.89	19.70

Cadman North
Everett Facilitywide E

Actual Emissions

Actual emissions are calculated based on annual production of 173,000 tons per year and 2,000 hours per year of operation.

Source	VOC (tpy)	NO_x (tpy)	CO (tpy)	SO_2 (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Drum Mixer	2.77	4.68	34.05	0.29	7.58	4.83	4.47
RAP/RAS Feed Transfers	--	--	--	--	0.28	0.13	0.02
RAP/RAS Pile Emissions	--	--	--	--	0.35	0.17	0.03
Project Emissions	2.77	4.68	34.05	0.29	8.20	5.12	4.52

Cadman North
Everett Facilitywide E

Facility-wide Emissions

The applicant included a facility-wide emission inventory, including non-modified sources such as silo filling and load out, haul roads, and storage piles. These calculations are included in the workbooks provided above.

Potential Emissions

Source	VOC (tpy)	NO_x (tpy)	CO [1] (tpy)	SO_2 (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Total HAP (tpy)	Maximum Individual HAP [2] (tpy)
Stack Emissions									
Drum Mixer	5.60	22.26	--	0.60	33.18	21.14	19.59	0.95	0.54
HMA Silo Filling [3]	2.13	--	--	--	--	--	--	0.03	1.47E-02
Total Stack Emissions	*7.73*	*22.26*	*--*	*0.60*	*33.18*	*21.14*	*19.59*	*0.98*	*0.56*
Fugitive Emissions									
Load-Out [4]	0.68	--	--	--	0.09	0.09	0.09	0.02	6.40E-04
Haul Roads	--	--	--	--	6.63	1.33	0.33	--	--
RAP/RAS Feed Transfers	--	--	--	--	0.90	0.43	0.06	--	--
Storage Pile Drop Points	--	--	--	--	2.97	1.41	0.21	--	--
Storage Pile Wind Erosion	--	--	--	--	0.59	0.28	0.04	--	--
Total Fugitive Emissions	*0.68*	*--*	*--*	*--*	*11.19*	*3.53*	*0.74*	*0.02*	*6.40E-04*
Total	**8.42**	**22.26**	**99.00**	**0.60**	**44.37**	**24.67**	**20.33**	**0.99**	**0.56**

[1] Cadman is requesting a synthetic minor limit on CO emissions of 99 tpy to maintain minor source status with respect to Title V.

[2] The maximum individual HAP is formaldehyde.

[3] Asphalt storage silos are controlled by the baghouse. Therefore, PM_{10} and $PM_{2.5}$ emissions from silo filling are not calculated separately.

[4] Load-out PM_{10} and $PM_{2.5}$ emissions are conservatively assumed equivalent to load-out total PM emissions.

Actual Emissions

Source	VOC (tpy)	NO_x (tpy)	CO [1] (tpy)	SO_2 (tpy)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	Total HAP (tpy)	Maximum Individual HAP [2] (tpy)
Stack Emissions									
Drum Mixer	2.77	4.68	34.05	0.29	7.58	4.83	4.47	0.47	0.27
HMA Silo Filling [3]	1.05	--	0.10	--	--	--	--	0.01	7.27E-03
Total Stack Emissions	*3.82*	*4.68*	*34.15*	*0.29*	*7.58*	*4.83*	*4.47*	*0.48*	*0.28*
Fugitive Emissions									
Load-Out [4]	0.34	--	--	--	0.05	0.05	0.05	0.01	3.17E-04
Haul Roads	--	--	--	--	3.28	0.66	0.16	--	--
RAP/RAS Feed Transfers	--	--	--	--	0.28	0.13	0.02	--	--
Storage Pile Drop Points	--	--	--	--	1.47	0.70	0.11	--	--
Storage Pile Wind Erosion	--	--	--	--	0.59	0.28	0.04	--	--
Total Fugitive Emissions	*0.34*	--	--	--	*5.66*	*1.80*	*0.37*	*0.01*	*3.17E-04*
Total	**4.16**	**4.68**	**34.15**	**0.29**	**13.23**	**6.63**	**4.85**	**0.49**	**0.28**

[1] Cadman is requesting a synthetic minor limit on CO emissions of 99 tpy to maintain minor source status with respect to Title V.

[2] The maximum individual HAP is formaldehyde.

[3] Asphalt storage silos are controlled by the baghouse. Therefore, PM_{10} and $PM_{2.5}$ emissions from silo filling are not calculated separately.

[4] Load-out PM_{10} and $PM_{2.5}$ emissions are conservatively assumed equivalent to load-out total PM emissions.

Reporting Source? This source has not reported emissions in the past. However, it appears the actual emissions of CO could be above the reporting threshold. This Order of Approval will require Cadman to report CO emissions each year.

G. OPERATING PERMIT OR PSD

The Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed. The facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria due to a federally enforceable limit for CO established by this Order of Approval No. 11812. The source is considered a "**synthetic minor**".

Emission increases associated with this project were reviewed for Prevention of Significant Deterioration (PSD) Program applicability. The facility is not an existing PSD major source and the increase in emissions from this permitting action is below PSD thresholds.

H. AMBIENT TOXICS IMPACT ANALYSIS

The estimated potential toxic air pollutant (TAP) emissions are based on a maximum annual production of 350,000 tons of asphalt per year. Since the existing dryer and mixer are being removed, Cadman is proposing to offset TAP emissions from the new rotary drum dryer. Emissions from the existing dryer and mixer are calculated using AP-42 Chapter 11.1 emission factors for batch mix hot mix asphalt plants. Annual TAP emissions for the existing dryer and mixer are calculated based on the annual average production rate for 2017 and 2018.

The table below includes estimated potential emission increases of all TAP and compares those to the Small Quantity Emission Rates (SQER) in WAC 173-460-150.

Pollutant	CAS No.	Pre-Project Emissions (lb/hr)	Pre-Project Emissions (tpy)	Post Project Emissions (lb/hr)	Post Project Emissions (tpy)	Emission Increase (lb/hr)	Emission Increase (tpy)	Avg Period	SQER (lb/avg period)	Project Emissions	Modeling Required?
Acetaldehyde	75-07-0	1.12E-01	2.34E-02	0	0	0	0	year	71	0	No
Benzene	71-43-2	9.80E-02	2.05E-02	1.56E-01	6.83E-02	5.80E-02	4.77E-02	year	6.62	95.49	Yes
Benzo(a)anthracene	56-55-3	1.61E-06	3.37E-07	8.40E-05	3.68E-05	8.24E-05	3.64E-05	year	1.74	0.07	No
Benzo(a)pyrene	50-32-8	1.09E-07	2.27E-08	3.92E-06	1.72E-06	3.81E-06	1.69E-06	year	0.174	3.38E-03	No
Benzo(b)fluoranthene	205-99-2	3.29E-06	6.88E-07	4.00E-05	1.75E-05	3.67E-05	1.68E-05	year	1.74	0.03	No
Benzo(k)fluoranthene	207-08-9	4.55E-06	9.52E-07	1.64E-05	7.18E-06	1.19E-05	6.22E-06	year	1.74	1.24E-02	No
Chrysene	218-01-9	1.33E-06	2.78E-07	7.20E-05	3.15E-05	7.07E-05	3.12E-05	year	17.4	0.06	No
Dibenz(a,h)anthracene	53-70-3	3.33E-08	6.96E-09	0	0	0	0	year	0.16	0	No
Ethyl Benzene	100-41-4	7.70E-01	1.61E-01	9.60E-02	4.20E-02	0	0	year	76.8	0	No
Formaldehyde	50-00-0	2.59E-01	5.42E-02	1.24E+00	5.43E-01	9.81E-01	4.88E-01	year	32	976.61	Yes
Hexane, n-	110-54-3	0	0	3.68E-01	1.61E-01	3.68E-01	1.61E-01	24-hr	92	8.83	No
Indeno(1,2,3-cd)pyrene	193-39-5	1.05E-07	2.20E-08	2.80E-06	1.23E-06	2.70E-06	1.20E-06	year	1.74	2.41E-03	No
Methyl Chloroform	71-55-6	0	0	1.92E-02	8.40E-03	1.92E-02	8.40E-03	24-hr	131	0.46	No
Naphthalene	91-20-3	1.26E-02	2.64E-03	3.60E-02	1.58E-02	2.34E-02	1.31E-02	year	5.64	26.23	Yes
Toluene	108-88-3	3.50E-01	7.32E-02	6.00E-02	2.63E-02	0	0	24-hr	657	0	No
Arsenic	7440-38-2	1.61E-04	3.37E-05	2.24E-04	9.80E-05	6.30E-05	6.43E-05	year	0.0581	0.13	Yes
Beryllium	7440-41-7	5.25E-05	1.10E-05	0	0	0	0	year	0.08	0	No
Cadmium	7440-43-9	2.14E-04	4.47E-05	1.64E-04	7.18E-05	0	2.71E-05	year	0.0457	0.05	Yes
Cobalt	7440-48-4	0	0	1.04E-05	4.55E-06	1.04E-05	4.55E-06	24-hr	0.013	2.50E-04	No
Copper	7440-50-8	9.80E-04	2.05E-04	1.24E-03	5.43E-04	2.60E-04	3.37E-04	1-hr	0.219	2.60E-04	No
Hexavalent Chromium	18540-29-9	1.68E-05	3.52E-06	1.80E-04	7.88E-05	1.63E-04	7.52E-05	year	0.00128	0.15	Yes
Lead	7439-92-1	3.12E-04	6.52E-05	2.48E-04	1.09E-04	0	4.33E-05	year	16	0.09	No
Manganese	7439-96-5	2.42E-03	5.05E-04	3.08E-03	1.35E-03	6.65E-04	8.42E-04	24-hr	0.00526	0.02	Yes
Mercury	7439-97-6	1.44E-04	3.00E-05	9.60E-05	4.20E-05	0	1.20E-05	24-hr	0.0118	0	No
Selenium	7782-49-2	1.72E-04	3.59E-05	1.40E-04	6.13E-05	0	2.54E-05	24-hr	2.63	0	No
CO	630-08-0	140.00	29.30	37.01	--	0	--	1-hr	50.4	0	No
NO_2	10102-44-0	8.75	1.83	5.08	22.26	0	20.43	1-hr	1.03	0	No
SO_2	7446-09-05	1.61	0.34	1.36	0.60	0	0.26	1-hr	1.45	0	No

For some TAP, the potential emission increases exceed the SQER. An air dispersion modeling analysis was conducted using AERMOD and meteorological data from Paine Field in Everett for 2011-2015.

The facility's property extends into the water at the northwest side of the facility. Although this area is not physically barred from public access, Cadman has indicated that they will place signage at the shoreline deterring public access. An aerial image of the facility with the modeled fenceline and building is provided below.

According to the application, the current configuration of the flow through the stack includes 80,000 cfm induced flow from the baghouse fan and an additional 9,000 cfm makeup air from the asphalt storage silos. Following completion of the project, the 80,000 cfm baghouse fan will provide air for all processes controlled by the baghouse, resulting in a total post-project flow rate of 80,000 cfm. A pre-project stack and post-project stack are therefore modeled to account for the difference in pre- and post-project stack flow rates. The pre- and post-project stacks are modeled as point sources, each with a unit emission rate of 1 g/s.

A summary of the maximum increases in modeled impact are summarized below. The model output files and a workbook containing the model resulting processing are also provided below.

CAS No.	Pollutant	Averaging Period	Max. Modeled Concentration Increase (µg/m^3)	ASIL (µg/m^3)	In Compliance with ASIL?
71-43-2	Benzene	year	0.0042	0.0345	Yes
50-00-0	Formaldehyde	year	0.042	0.167	Yes
91-20-3	Naphthalene	year	0.0011	0.0294	Yes
7440-38-2	Arsenic	year	0.000006	0.000303	Yes
7440-43-9	Cadmium	year	0.000003	0.000238	Yes
18540-29-9	Hexavalent Chromium	year	0.0000064	6.67E-06	Yes
7439-96-5	Manganese	24-hr	0.004	0.04	Yes


Model Results Processing.xlsx


TTC11.aml


TTC12.aml


TTC13.aml


TTC14.aml


TTC15.aml

Based on these results, impacts of all TAPs are below the ASIL.

I. APPLICABLE RULES & REGULATIONS

Puget Sound Clean Air Agency Regulations

SECTION 5.05 (c): The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:
(1) Periodic inspection of all equipment and control equipment;
(2) Monitoring and recording of equipment and control equipment performance;
(3) Prompt repair of any defective equipment or control equipment;
(4) Procedures for startup, shut down, and normal operation;
(5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and
(6) A record of all actions required by the plan.
The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

SECTION 6.09: Within 30 days of completion of the installation or modification of a stationary source subject to the provisions of Article 6 of this regulation, the owner or operator or applicant shall file a Notice of Completion with the Agency. Each Notice of Completion shall be submitted on a form provided by the Agency, and shall specify the date upon which operation of the stationary source has commenced or will commence.

SECTION 9.03: (a) It shall be unlawful for any person to cause or allow the emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, which is:
(1) Darker in shade than that designated as No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or
(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section 9.03(a)(1).
(b) The density or opacity of an air contaminant shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point of the plume nearest the point of emission.
(c) This section shall not apply when the presence of uncombined water is the only reason for the failure of the emission to meet the requirements of this section.

SECTION 9.09: General Particulate Matter (PM) Standard. It shall be unlawful for any person to cause or allow the emission of particulate matter in excess of the following concentrations:
Equipment Used in a Manufacturing Process: 0.05 gr/dscf
Fuel Burning Equipment (other than wood): 0.05 gr/dscf at 7% O_2

SECTION 9.11: It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

SECTION 9.13: It shall be unlawful for any person to cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant which causes detriment to health, safety or welfare of any person.

SECTION 9.15: It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:
(1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
(2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
(3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
(4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

REGULATION I, SECTION 9.20(a): It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

Washington State Administrative Code

WAC 173-400-040(3): Fallout. No person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

WAC 173-400-040(4): Fugitive emissions. The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

(a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC173-400-111(7): Construction limitations.

(a) Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time. The permitting authority may extend the eighteen-month period upon a satisfactory showing by the permittee that an extension is justified.

Federal

40 CFR 60 Subpart A and Subpart I apply to this facility.

Subpart A:

60.4(b) Delegation of authority to PSCAA to enforce NSPS.

60.7(a)(1, 3, 4) Notification & Record keeping.

60.7(b) Maintain records including malfunctions.

60.8 Requirements for source testing. (Stack test has already been completed for the affected facility.)

60.11(a, b, c, e) Compliance requirements for PM_{10} & opacity. Note: requires that Method 9 tests include three one-hour observations conducted concurrently with the Method 5 test runs.

60.11(d) Operate consistent with good engineering control practices.

Subpart I:

60.90 Defines the applicable sources

60.91 Contains definitions

60.92 Has the PM emissions standard of 0.04 gr/dscf measured by EPA method 5 which is only the "Front-Half". 20 percent opacity limit.

60.93 Test methods include collecting a min of 31.8 dscf of sample for PM, and EPA Method 9 for opacity. (Stack test has already been completed for the affected facility.)

J. PUBLIC NOTICE

A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. A copy of the website posting is below:

New Construction Projects

Company	Address	Project Description	Date Posted	Contact Engineer
Cadman Materials, Inc.	300 W Marine View Dr, Everett, WA 98201	Application to replace the existing dryer and mixer at an asphalt plant with a new counterflow drum mixer, to increase the usage of reclaimed asphalt pavement (RAP), and to add recycled asphalt shingle (RAS) feeding equipment.	5/30/19	Courtney O'Gorman

This project meets the criteria for mandatory public notice under WAC 173-400-171(3)(k) for establishing a voluntary limit on emissions as well as WAC 173-460-071(2). This is due to requesting a voluntary limit on emissions for carbon monoxide and taking a limit on emissions for the existing rotary dryer and pug mill mixer (i.e. removing the existing dryer and mixer from operation) to offset emissions of toxic air pollutants from the new drum mixer. A 30-day public comment period was held from October 27, 2019 through November 27, 2019. Notices that the draft materials were open to comment were published in the Everett Herald, the Marysville Globe, and the Daily Journal of Commerce on October 26, 2019. The Agency posted the application, draft Order of Approval, and the draft worksheet on the Agency's website during the comment period. [discuss comments received].

[insert public notice posting]

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Specific Conditions:

NEW SOURCE PERFORMANCE STANDARDS

3. This hot mix asphalt facility is subject to the federal Standards of Performance for Asphalt Concrete Plants under 40 CFR Part 60, Subpart I, and General Provisions under 40 CFR Part 60, Subpart A, as required by Conditions 4, 5, and 6 of this Order of Approval,.

4. The owner or operator subject to the provisions of this subpart shall not discharge or cause the discharge into the atmosphere from any affected facility any gases which:

   a) Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).
   b) Exhibit 20 percent opacity, or greater.

5. The owner or operator shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a monitoring device is inoperative.

6. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

EMISSION LIMITS

7. The existing rotary dryer and pug mill mixer shall be removed from service prior to the first operation of the new H&R drum mixer. A record of the date of the last operation of the existing rotary dryer and pug mill mixer and the date of the first operation of the new H&R drum mixer shall be kept on file for Agency inspection.

8. Emissions from the asphalt storage silos shall be controlled by the H&R Mechanical Pulse Jet 806-6-12 baghouse.

9. Total particulate matter emissions from the plant exhaust stack shall not exceed 0.027 gr/dscf (corrected to 7% O_2) as measured by U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.

10. Filterable particulate matter emissions from the plant exhaust stack shall not exceed 0.014 gr/dscf (corrected to 7% O2) as measured by U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.

11. Opacity from the plant exhaust stack shall not exceed 5% opacity for a period or periods aggregating more than 3 minutes during any one hour as measured by WDOE Method 9A.

12. Emissions of Non-Methane/Non-Ethane VOC (NMNEVOC) shall not exceed 0.032 lb NMNEVOC per ton of hot mixed asphaltic concrete produced. Compliance with this limit shall be determined by the average of three 60-minute test runs performed in accordance with Section 3.07 of PSCAA

Regulation 1 and using EPA reference methods 1, 3A, 4, and 25A (using either an FID with a methane "cutter", OR using EPA Method 320 or EPA Method 18 to analyze for methane and ethane, and subtracting the methane and ethane results from the total VOC measured by the FID analyzer) from Appendix A of 40 CFR Part 60. NMNEVOC shall be expressed as propane. Other equivalent test methods may be used with prior written approval of the Agency.

13. Emissions of carbon monoxide shall not exceed 311.0 ppmvd (corrected to 7% O2) as determined by the average of three 60-minute test runs performed in accordance with Section 3.07 of PSCAA Regulation I and using USEPA reference methods 1, 3A, 4, and 10 from Appendix A of 40 CFR Part 60.

14. Emissions of oxides of nitrogen shall not exceed 26.0 ppmvd (corrected to 7% O2) as determined by the average of three 60-minute test runs performed in accordance with Section 3.07 of PSCAA Regulation I using USEPA reference methods 1, 3A, 4, and 7E from Appendix A of 40 CFR Part 60.

15. There shall be no visible emissions from the reclaimed asphalt pavement (RAP) and recycled asphalt shingle (RAS) feed bins and conveyors.

FACILITY-WIDE EMISSION LIMIT

16. Facility-wide emissions of carbon monoxide shall not exceed 99.0 tons during any 12 consecutive months after the date of this Order.

17. Within 30 days of the end of each month, the owner or operator shall calculate the facility-wide carbon monoxide emissions for the previous 12 months using the monthly natural gas usage and either the BACT emission limit in Condition 13 or the results of the most recent carbon monoxide emission test that shows compliance with the BACT emission limit in Condition 13. For the purposes of this calculation, the BACT limit in Condition 13 or the source test results shall be converted to into terms of pounds of carbon monoxide per million Btu of fuel used using EPA Method 19.

18. The owner or operator shall notify the Puget Sound Clean Air Agency in writing, within 30 days after the end of each 12-month period if, during that period, emissions of CO exceed 90 tons. The report shall include emissions data for the time period for which these thresholds were exceeded.

19. By June 30th of each calendar year, the owner or operator must report to PSCAA the total emissions of carbon monoxide for the previous calendar year. The owner or operator must also report the emissions of any pollutant that exceeded the thresholds in PSCAA Regulation I, Section 5.05(b) for the previous calendar year. These emission reports must be submitted via email to EmissionReporting@pscleanair.org or in the most current method in which PSCAA is receiving electronic submittal.

PRODUCTION LIMIT

20. The owner or operator shall record and limit the total production of asphalt to no more than 350,000 tons for any 12 consecutive months.

21. A notification of a violation of Condition 20 shall be sent to Puget Sound Clean Air Agency within 30 days following any month when the 12 consecutive month rolling total exceeds 350,000 tons per year of asphalt production.

OPERATING REQUIREMENTS

22. Prior to the initial startup of the new drum mixer, the owner or operator shall install signs precluding general public access along the northwest shoreline of the facility property. The signs must be posted in plain view, and each sign must be free of obstruction and clearly legible from the water. Each sign must state "No Trespassing. Private Property within 120 feet from shoreline", or similar language. A Public Access Control Plan shall be developed and submitted to the Agency, inclusive of a location map and photographs. The owner or operator shall incorporate the Public Access Control Plan in the facility Operations and Maintenance Plan required by Regulation I, Section 5.05. If the Public Access Control Plan needs to be updated, the owner or operator shall notify the Agency of any substantive changes.

23. The temperature of the asphaltic concrete mix exiting the drum mixer shall not exceed the optimum mix temperature +25°F for each product specification as set out in the product's current Mix Design Evaluation Report. Documentation of each product's Mix Design Evaluation Report including optimum mix temperature shall be kept on file and incorporated into the Operations and Maintenance plan required by Agency Regulation I, Section 5.05(c).

24. Each hourly combined total recycled asphalt (RA) percentage, consisting of recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS), monitored and recorded per Condition 32 shall not exceed the average RA percentage by weight used in a passing source test of Conditions 9 through 14. To set a greater RA limit, the facility can choose at any time to conduct a new test (at a greater RA percentage than previous tests), that demonstrates compliance with the limits in Conditions 9 through 14.

25. The owner or operator shall not use RAS that contains asbestos, as defined in Agency Regulation III, Section 4.01(c). The owner or operator shall collect samples for every load of RAS received and have the samples analyzed using polarized light microscopy by an independent third party in accordance with 40 CFR 763, Subpart E, Appendix E, Section 1, to demonstrate that RAS is asbestos-free. As an alternative to the sampling in this condition, for each delivered load of RAS, the owner or operator shall collect documentation from the supplier that shows that the sampling and analysis were completed in accordance with 40 CFR 763, Subpart E, Appendix E, Section 1, and the results of the analysis. The delivery log and all bulk sample analysis results shall be maintained on-site and available for inspection for a period of two years.

26. Records of every delivery of RAS shall be maintained confirming the origin, supplier, and amount (mass) of RAS.

27. The H&R Mechanical Pulse Jet 806-6-12 baghouse shall be equipped with a gauge measuring the pressure drop across the baghouse. The pressure gauge shall be in operation whenever the baghouse is in operation. The pressure gauge shall be marked with the acceptable pressure drop range. The maximum acceptable pressure drop shall be determined from manufacturer

specifications for the bags used in the baghouse. The minimum acceptable pressure drop shall be determined from manufacturer specifications for the bags used in the baghouse. The pressure drop observed during the most recent compliance source test shall fall within the defined acceptable range of pressure drop. The acceptable range and the basis for the range shall be included in the facility Operations and Maintenance plan required by Agency Regulation I, Section 5.05(c)

SOURCE TESTING

28. The owner or operator shall notify the Puget Sound Clean Air Agency within 15 days of initial startup of the new H&R drum mixer. The owner or operator shall submit the notification to facilitysubmittal@pscleanair.org.

29. The owner or operator shall test emissions for compliance with Conditions 9 through 14 of this Order within 90 days after achieving the maximum production rate, but no later than 180 days after initial startup of this plant. The owner or operator shall also test emissions for compliance with Conditions 9 through 14 at least every five years. The owner or operator shall submit a compliance test plan with the test notification submitted under Regulation I, Section 3.07(b) at least 30 days prior to each compliance test. The test plan shall detail the test methods used for each pollutant, the operational data that will be collected during the test, and any other relevant information about the test.

30. The owner or operator may conduct an emission test as set out in Condition 29 at any time (given notification as required in Regulation I, Section 3.07(b)) for the purposes of setting the RA limit in Condition 24. The owner or operator shall submit a compliance test plan with the test notification submitted under Regulation I, Section 3.07(b) at least 30 days prior to the compliance test.

31. During the emission tests required by Conditions 29 and 30, the following operational data shall be collected during each test run and reported in the source test report:
    a) Hourly weight of RAP and RAS used, plus the hourly weight of asphalt produced;
    b) hourly average RA (RAP plus RAS) total percent by weight usage
    c) standard cubic feet of fuel combusted;
    d) aggregate moisture percentage (as measured by the Quality Control lab for a representative sample taken the day of the test);
    e) asphalt cement content percentage;
    f) baghouse pressure drop;
    g) baghouse fan speed (as a percentage of full speed);
    h) baghouse pulse cycle time;
    i) flue gas damper setting (as a percentage of maximum opening);
    j) maximum temperature of mix as it exits the drum mixer; and

k) product specification produced during the run, a copy of the specification, and maximum temperature allowed by the specification.

MONITORING

32. When operating, the owner or operator shall monitor and record the following information:
    a) one daily pressure drop across the baghouse;
    b) one daily inspection for visible emissions and particulate fallout for the baghouse and RAP and RAS feed bins and conveyors;
    c) hourly weight of RA (RAP plus RAS) used, plus the hourly weight of asphalt produced;
    d) calculated hourly average RA (RAP plus RAS) total percent by weight usage;
    e) annual (12 consecutive months rolling total) asphalt production;
    f) monthly fuel use;
    g) one mix temperature reading recorded for each hour in which the drum mixer operates;
    h) the product specification produced and the hour it was produced; and
    i) the time (in hours) the drum mixer operated.

COMPLAINTS

33. The owner or operator shall establish a complaint response program as part of the O&M Plan. The program shall include a complaint phone line, criteria and methods for establishing whether Cadman Materials, Inc. may be the source of emissions related to the complaint, and a format for communicating results of investigation and advising complainants of Cadman Materials, Inc. corrective actions.

    a) The owner or operator shall record and investigate complaints received regarding air quality as soon as possible, but no later than one working day after receipt.
    b) The owner or operator shall correct any problems identified by these complaint investigations within 24 hours of identification or cease operation of the equipment until the problem is resolved;
    c) Records of all complaints received regarding air quality issues shall include information regarding date and time of complaint; name and address of complainant (if known); nature of the complaint; investigation efforts completed and basis for conclusion reached; and date, time, and nature of any corrective action taken.

RECORDS

34. The owner or operator shall maintain records required by this Order of Approval, as well as the records identified in the Operation and Maintenance Plan required by Regulation I, Section 5.05, for two years and make them available to Puget Sound Clean Air Agency personnel upon request.

35. Upon startup of the equipment reviewed under this Order of Approval, this Order supersedes and cancels Order of Approval No. 6643 dated September 12, 1996.

L. CORRESPONDENCE AND SUPPORTING DOCUMENTS

From: Courtney O'Gorman <CourtneyO@pscleanair.org>
Sent: Thursday, June 6, 2019 7:19 AM
To: McDonough, Christy M (Redmond) USA <Christy.McDonough@LehighHanson.com>
Cc: Hui Cheng <hcheng@trinityconsultants.com>
Subject: NOC #11812 Incomplete - Cadman Materials (Reg. 18019)

Hi Christy,

I have recently been assigned as the engineer to review and process your Notice of Construction (NOC) application #11812 for changes to the North Everett asphalt plant. I have reviewed the contents of the application and have determined that your application is incomplete at this time. Please provide the following information:

General

1. Section 2 of the application indicates that the baghouse has a rated capacity of 80,000 cfm, but Order No. 6643 lists a capacity of 86,000 cfm. Can you confirm which value is correct?

2. Please note that I will need to know the make and model of the drum mixer and burner before the permit can be issued.

3. The description for Order No. 6643 says that, in addition to the dryer and baghouse, there are "six Belt Conveyors, six Above Ground Storage Tanks, and Asphalt Storage Silos." Since this new permit will cancel and supersede Order No. 6643, I want to make sure I update and clarify this description accurately:

    a. Based on the process flow diagram, it looks like there are four (4) hot mix asphalt storage silos. Silo 3 and Silo 4 are labeled with a capacity of 200 short tons. Do Silos 1 and 2 have the same capacity? If not, please provide the capacity of each.

    b. Based on the process flow diagram, it looks like there are four liquid asphalt storage tanks in use (25,700 gal, 12,000 gal, 12,000 gal, and 10,200 gal) and one not in use (30,000 gal). There is also a 3,900 gallon diesel tank. Can you confirm that these are the six aboveground storage tanks that are referred to in the Order No. 6643 description?

4. In the Air section of the SEPA checklist, can you list the quantities of emissions associated with the project in this section, rather than referring to the NOC application? Please update this once the emission calculations are finalized and provide an updated version of the SEPA checklist.

Emission Calculations

5. Section 3.1 of the report says that the new burner will be rated at 125 MMBtu/hr but operated at 115 MMBtu/hr or less due to the design of the North Everett plant. The potential emission calculations should be updated to be based on the maximum rated capacity of the burner (125 MMBtu/hr). This means that there may be increases of NO_x/CO/SO_2 that should be included in the TAP analysis.

6. The potential PM emissions from the mixer should be calculated using the flow rate of the stack in dry standard cubic feet per minute rather than actual cubic feet per minute. Also, please note that at this point, it appears that the BACT limit for total PM will be 0.027 gr/dscf, corrected to 7% O_2 rather than 0.02 gr/dscf. This is consistent with recent BACT determinations for asphalt mixer replacements. Please update the calculations accordingly.

7. Please include PM emission calculations for the new RAS feeding equipment and new RAP/RAS feed bins & associated conveyors that are being installed as part of this project.

8. Please include total PM (rather than only PM_{10} and $PM_{2.5}$) in the drum mixer calculations and the summary table.

9. Please calculate CO emissions from silo filling in Table B-3a using the equations in Table 11.1-14 of AP-42 Chapter 11.1.

10. Can you provide an aerial image showing the haul road path at the facility?

11. Footnote 1 of Table B-5a says that maximum annual throughput is estimated based on Cadman's projection of 500,000 tons HMA per year. My understanding is that total production will be limited to 350,000 tons per year. Can you confirm this?

12. Table B-5b says that pile area is estimated using the footprint area from Google Earth imagery. The piles appear to be cone shaped in Google Earth, so please calculate the surface area using the pile dimensions and assuming they are cones.

13. Please add a summary table that shows the criteria pollutant emission increases due to the project (in addition to the current facility-wide emission summary table).

14. Please also provide an estimate of the **actual** post-project facility-wide emissions. If Cadman expects to be operating near the 350,000 ton/year permit limit, let me know, and I will assume that the estimated actual emissions are equal to the potential emissions.

Modeling

15. Are there any measures taken to restrict public access to the water at the northeast edge of the property line? If not, the fenceline should be adjusted to cover only the area that is physically barred from public access (i.e., remove the water from the included property in the model).

16. Please provide a windrose for the combined meteorological dataset (2011-2015).

_____

Please also note that you will be receiving an additional email, which will contain an invoice for additional fees associated with this NOC review. For more detailed information on how these fees are determined, please see Regulation I, Article 6, Section 6.04
(http://www.pscleanair.org/DocumentCenter/View/339/1-6-PDF?bidId)

Please feel free to reach out if you have any questions!

Thank you!

Courtney O'Gorman
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"Working together for clean air"

From: Hui Cheng <hcheng@trinityconsultants.com> Sent: Fri 6/28/2019 9:38 AM
To: Courtney O'Gorman
Cc: McDonough, Christy M (Redmond) USA
Subject: RE: NOC #11812 Incomplete - Cadman Materials (Reg. 18019)

Message
Truck Route.jpg (85 KB)
2011-2015 Wind Rose.JPG (82 KB)
Cadman North Everett Facilitywide Emissions - Actual Emissions v2.0.xlsx (106 KB)

Courtney,

Please see our response to your request below.

1. As discussed over the phone on 6/10/2019, there was a change made on the baghouse due to condensing issues. The baghouse was reduced in the size and air flow rate.
2. The drum mixer is a custom equipment: H&R 10x47. Cadman currently have two options on the burner: NovaStar and Talon II. The specifications of the two burner options were provided as part of the NOC application.
3. All silos are 200 tons. The liquid storage tanks are what are present onsite, and they are likely the ones that were permitted under NOC 6643.
4. Updated SEPA Checklist is attached.
5. The emissions are updated to assess the burner at 125 MMBtu/hr. Please see attached emission calculation workbooks. No emission increase of NOX and CO thus no additional TAP review is required.
6. The emission calculations are updated to reflect the BACT limit of 0.027 gr/dscf total PM and 0.014 gr/dscf filterable PM. The flow rate is also adjusted to 7% based on the following assumptions:
    a. 200F exhaust temperature based on Cadman's projection.
    b. 10% moisture content based on AP-42 background test reports.
    c. 13% O2 in exhaust based on Cadman's stack test information from another HMA facility in the area.
7. Emission calculations are updated to include RAS and RAP feeding equipment.
8. Emission calculations are updated to include PM emissions for all sources.
9. Emission calculations are updated to include CO emissions from silo filling.
10. Haul road path is provided in the image attached.
11. The footnote is updated in the attached workbooks. The proposed annual production limit is 350,000 tons.
12. The storage piles wind erosion calculations are updated to use the surface areas of all piles. The aggregate piles dimensions are measured with Google Earth imagery. The dimensions for other smaller piles are based on Cadman's projections.
13. Project emission summary is included in the attached workbooks.
14. A workbook showing the projected annual actual emissions is attached. Cadman North Everett Facilitywide Emissions – Actual Emissions v2.0.xlsx.
15. As discussed on the phone on 6/10/2019, Cadman will post signs to prevent public access to the property.
16. The windrose for the modeled five year period is attached.

If you have any questions, feel free to let us know. Thank you!

Hui Cheng, E.I.T
Senior Consultant

Trinity Consultants
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Office: 253-867-5600 x 1003

M. REVIEWS

Reviews	Name	Date
Engineer:	Courtney Shernan (formerly O'Gorman)	7/15/2019
Inspector:	Tom Hudson	9/18/2019
Second Review:	Carole Cenci	7/30/2019
Applicant Name:	Christy McDonough	10/16/2019