west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3395
Plant ID No.:	035-00065
Applicant:	Southern West Virginia Asphalt, Inc.
Facility Name:	Ravenswood HMA Plant #61
Location:	Ravenswood, Jackson County
NAICS Code:	324121
Application Type:	Construction
Received Date:	January 17, 2018
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$2,000.00
Date Received:	January 17, 2018
Complete Date:	February 8, 2018
Applicant Ad Date:	January 19, 2018
Newspaper:	*Jackson Newspapers*
UTM's:	Easting: 433.620 km Northing: 4,311.490 km Zone: 17
Description:	Applicant proposes to construct and operate a Hot Mix Asphalt Plant to include a portable fractionated reclaimed asphalt pavement (FRAP) processing system.

DESCRIPTION OF PROCESS

Aggregates (sand, slag sand, and limestone) are delivered to the site by barge (90 %) or by truck (10 %). Materials shipped by barge are unloaded by a crane barge that deposits material into a hopper H1/PE (TP1/MD). Material drops from the hopper onto a conveyor belt, BC1/N (TP2/PE). BC1/N transfers material to conveyor belt BC2/N (TP3/MD), which then transfers material to a radial stacker RS1/N (TP4/MD). The radial stacker transfers material to open stockpiles OS1/N through OS6/N (TP5/MD). Materials shipped by truck are directly transferred to OS1/N through OS6/N (TP5/MD). Recycled asphalt pavement (RAP) is trucked to the site and directly transferred to stockpile OS7/CA (TP12/CA).

Aggregates from OS1/N through OS6/N are transferred by a front-end loader to cold feed bins B1/PE through B5/PE (TP6/MD). From the bins, material is transferred by belt feeders to a collector conveyor belt BC3/N (TP7/PE). The collector conveyor belt feeds an in-line dual screen scalping screen S1/PE (TP8/MD). Oversized material drops to the ground (TP9/PE) and properly sized material drops onto conveyor belt BC4/N (TP10/PE) which feeds the counter flow drum mixer CFDM1/APCD1 & APCD2 (TP11/FE). Only one screen is used at a time on the scalping screen. When the upper screen is not in use, a section of the screen is lifted to allow material to freely pass to the lower screen.

RAP from OS7/CA can be transferred by front-end loader directly to one of two RAP bins B6/PE or B7/PE (TP13/MD). The RAP drops from bin B6/PE or B7/PE onto conveyor belt BC5/N (TP14/PE) and then onto conveyor belt BC6/N (TP15/PE), which feeds the counter flow drum mixer CFDM1/APCD1 & APCD2 (TP16/FE).

Liquid asphaltic cement from T1 is piped to CFDM1/APCD1 & APCD2, where the various

materials are mixed to form hot mix asphalt (HMA). The CFDM1 burner is fired with natural gas.

Once mixed, the HMA leaves the drum and drops onto drag link conveyor DL1/FE (TP17/PE). HMA leaving the drag link conveyor DL1/FE drops into asphalt silo BS1/FE or onto drag link conveyor DL2/FE (TP18/PE). From drag link conveyor DL2/FE, asphalt drops into asphalt silo BS2/FE (TP19/PE). The HMA is transferred to trucks via the truck load-outs at the base of each of the silos (TP20/PE) and is shipped offsite.

Emissions from CFDM1 are vented to the inertial separator APCD1 and baghouse APCD2 and are vented to the atmosphere through emissions point 1E. Collected particulate matter is returned to CFDM1/APCD1 & APCD2 via auger SC1/FE (TP21/FE and TP22/FE), where it becomes part of the product.

Asphaltic cement is trucked to the site and stored in heated tank T1, which is heated via a natural gas-fired asphalt heater AH1/N (2E). Number 2 fuel oil for use in the endloader and portable FRAP engine is trucked to the site and stored in tank T2. Natural gas is piped to the facility.

FRAP System

RAP from OS7/CA can also be transferred by front-end loader to the hopper F-H1/PE (F-TP1/CA) on the portable fractionated RAP system. The hopper feeds belt conveyor F-BC1/PE (F-TP2/FE), which transports the RAP to the double-deck screen F-S1/FE (F-TP3/PE). Oversized material is fed to belt conveyor F-BC2/N (F-TP4/FE), which transports the material to the horizontal shaft impactor F-CR1/FE (F-TP5/FE). The material drops from the crusher onto belt conveyor F-BC1/PE (F-TP7/FE), which transports it back to the screen. The crusher can also be arranged so that oversized material from the screen bypasses the crusher and returns to the RAP stockpile OS7/CA (F-TP6/N).

The smaller fractions from the screen are discharged to belt conveyors F-BC3/N (F-TP8/PE) and F-BC4/N (F-TP10/PE). F-BC3/N and F-BC4/N can transfer material directly to the sized RAP stockpiles OS9/N (F-TP9/MD) and OS8/N (F-TP11/MD) or to radial stacker F-RS1/N (F-TP9/MD or F-TP11/MD). The radial stacker is only fed by one of the belt conveyors F-BC3/N or F-BC4/N at any given time. Material from F-RS1/N is transferred to OS8/N or OS9/N (F-TP12/MD). From stockpiles OS8/N and OS9/N, materials are transferred via end loader to one of the stationary RAP bins B6/PE or B7/PE (TP13/MD). The FRAP system will operate no more than 504 hours per year at this facility.

See the following table for description, maximum throughput, control equipment, and maximum storage for all permitted equipment at the Ravenswood facility:

Table 1: Equipment Summary

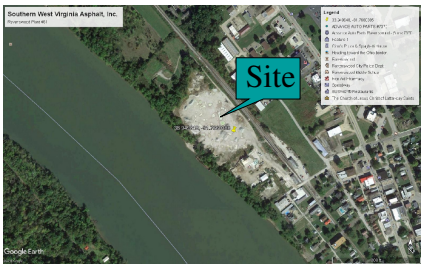
Equipment ID No.	Emission Point ID	Description	Installation / Modification Date	Maximum Capacity		Control Device[1]
FRAP System						
F-H1	F-H1	FRAP Feed Hopper	2018	200 tons/hr	50,000 tons/yr	PE
F-BC1	F-BC1	FRAP Belt Conveyor	2018	200 tons/hr	50,000 tons/yr	PE
F-S1	F-S1	FRAP Screen - ASTEC PEP	2018	200 tons/hr	50,000 tons/yr	FE
F-BC2	F-BC2	FRAP Belt Conveyor	2018	75 tons/hr	18,750 tons/yr	N
F-CR1	F-CR1	FRAP Crusher - KPI-JCI 3136	2018	75 tons/hr	18,750 tons/yr	FE
F-BC3	F-BC3	FRAP Belt Conveyor	2018	200 tons/hr	50,000 tons/yr	N
F-BC4	F-BC4	FRAP Belt Conveyor	2018	200 tons/hr	50,000 tons/yr	N
F-RS1	F-RS1	FRAP Radial Stacker	2018	200 tons/hr	50,000 tons/yr	N
F-ENG1	F-1E	FRAP Engine (John Deere 6068HFC93A-mfg. date 5/17/2013, EPA Interim Tier 4)	2018	9.28 gal/hr	173 hp @ 2,400 rpm	N
HMA System						
H1	H1	Aggregate Hopper - 200 Ton	2018	300 tons/hr	200,000 tons/yr	PE
OS1	OS1	Aggregate Stockpile - 5,000 Ton	2018	300 tons/hr	30,000 tons/yr	N
OS2	OS2	Aggregate Stockpile - 5,000 Ton	2018	300 tons/hr	4,000 tons/yr	N
OS3	OS3	Aggregate Stockpile - 20,000 Ton	2018	300 tons/hr	50,000 tons/yr	N
OS4	OS4	Aggregate Stockpile - 20,000 Ton	2018	300 tons/hr	50,000 tons/yr	N

Equipment ID No.	Emission Point ID	Description	Installation / Modification Date	Maximum Capacity		Control Device[1]
OS5	OS5	Aggregate Stockpile - 20,000 Ton	2018	300 tons/hr	100,000 tons/yr	N
OS6	OS6	Aggregate Stockpile - 20,000 Ton	2018	300 tons/hr	50,000 tons/yr	N
OS7	OS7	Aggregate Stockpile - 50,000 Ton	2018	300 tons/hr	50,000 tons/yr	N
OS8	OS8	Aggregate Stockpile - 50,000 Ton	2018	300 tons/hr	50,000 tons/yr	N
OS9	OS9	Aggregate Stockpile - 50,000 Ton	2018	300 tons/hr		N
BC1	BC1	Conveyor Belt - Aggregates	2018	300 tons/hr	200,000 tons/yr	N
BC2	BC2	Conveyor Belt - Aggregates	2018	300 tons/hr	200,000 tons/yr	N
RS1	RS1	Radial Stacker - Aggregates	2018	300 tons/hr	200,000 tons/yr	N
B1	B1	Cold Feed Bin - 20 Ton	2018	300 tons/hr	200,000 tons/yr	PE
B2	B2	Cold Feed Bin - 20 Ton	2018	300 tons/hr		PE
B3	B3	Cold Feed Bin - 20 Ton	2018	300 tons/hr		PE
B4	B4	Cold Feed Bin - 20 Ton	2018	300 tons/hr		PE
B5	B5	Cold Feed Bin - 20 Ton	2018	300 tons/hr		PE
BC3	BC3	Collector Conveyor Belt	2018	300 tons/hr	200,000 tons/yr	N
S1	S1	Scalping Screen - ASTEC PSS-2412-60	2018	300 tons/hr	200,000 tons/yr	PE
BC4	BC4	Conveyor Belt - Aggregates	2018	300 tons/hr	200,000 tons/yr	N
SC1	SC1	Screw Conveyor - Baghouse Dust	2018	20 tons/hr	20,000 tons/yr	FE
CFDM1	1E	Counter Flow Drum Mixer - Dillman D-PUCF9050, ASTEC WJ-75-O Burner	2018	300 tons/hr	200 tons/yr	APCD1 & APCD2
B6	B6	RAP Bin - 20 Ton	2018	300 tons/hr	50,000 tons/yr	PE
B7	B7	RAP Bin - 20 Ton	2018	300 tons/hr		PE
BC5	BC5	RAP Conveyor Belt	2018	300 tons/hr	50,000 tons/yr	N
BC6	BC6	RAP Conveyor Belt	2018	300 tons/hr	50,000 tons/yr	N
DL1	DL1	Drag Link Conveyor	2018	300 tons/hr	200,000 tons/yr	FE
DL2	DL2	Drag Link Conveyor	2018	300 tons/hr	200,000 tons/yr	FE
BS1	BS1	HMA Storage Silo - 200 Ton	2018	200 tons	200,000 tons/yr	FE
BS2	BS2	HMA Storage Silo - 200 Ton	2018	200 tons		FE
Tanks						
T1	T1	Asphalt Storage Tank	2018	30,000 gal	2,800,000 gal/yr	N
T2	T2	Fuel Storage Tank – #2 fuel oil	2018	1,000 gal	20,400 gal/yr	N
AH1	2E	Asphalt Heater – Natural Gas	2018	1,350 scf/hr	7,560 hrs/yr	N

[1] FE - Full Enclosure; PE - Partial Enclosure; N – None; APCD1 – Inertial Separator; APCD2 – ASTEC PEBH-52

SITE INSPECTION

Southern West Virginia Asphalt, Inc.'s new facility will be constructed adjacent to Martin Marietta Materials Aggregate facility in Ravenswood, West Virginia. A site visit by the writer was deemed unnecessary at this time.



Directions in application: From I-77 North, take Exit 146 and take ramp right toward WV-2 South/US-33 West. Go 0.2 mile and turn left onto US-33/WV-2. Go 2.4 miles and turn right onto US-33/WV-68/Washington Street. Go 1.1 miles and turn left onto Sycamore Street. Go one block and, at Race street, turn left, then take an immediate right back onto Sycamore Street. Go straight across railroad tracks and turn into the Martin Marietta Materials Ravenswood Yard on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The Ravenswood facility will operate at a maximum production rate of 300 tons per hour and 200,000 tons per year of asphalt. Emissions were calculated by Potesta & Associates, Inc. on behalf of Southern West Virginia, Asphalt, Inc. Please see the following descriptions and tables for calculation explanations:

Materials Handling

Emission factor calculation and mean wind speed were taken from WVDEP General Permit G40-C Emissions Calculation Spreadsheet. Control efficiencies taken from WVDEP General Permit G40-C, Instruction and Forms, May 6, 2011were utilized to calculate the facility transfer point emissions. The facility will be limited to a process rate of 300 tons per hour and 200,000 tons per year of HMA production.

Table 2a: Materials Handling

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Transfer Points	Total Particulate Matter	7.24	2.44
	PM_{10}	3.45	1.16
	$PM_{2.5}$	0.52	0.17

Silo Filling and Plant Loadout

Silo filling and plant loadout emissions were calculated using emission factors from AP-42 Table 11.1-14. (Hot Mix Asphalt Plants: Predictive Emission Factor Equations for Load-Out and Silo Filling Operations) and Table 11.1-16 (Hot Mix Asphalt Plants: Speciation Profiles for Load-Out, Silo Filling, and Asphalt Storage Emissions - Organic Volatile-Based Compounds).

Table 2b: Silo Filling and Plant Loadout

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Silo Filling and Plant Loadout	Total Particulate Matter	0.35	0.12
	PM_{10}	0.08	0.03
	$PM_{2.5}$	0.03	0.02
	VOC	12.15	4.05
	CO	1.45	0.49
	Total HAPs*	0.162	0.054

* HAPs for Silo Filling include Benzene, Ethylbenzene, Toluene, Xylene, and Formaldehyde

Stockpiles

Fugitive emissions from stockpiles were calculated using emission factors from AP-42 Section 11.2.3 (Fugitive Emissions, equation #2).

Table 2c: Fugitive Emissions – Stockpiles

Fugitive Emissions Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Stockpiles (OS1 through OS9)	Total Particulate Matter	0.024	0.100
	PM_{10}	0.011	0.048
	$PM_{2.5}$	0.010	0.010

Haulroads

Emission factors for haulroads were taken from AP-42 Section 13.2 (Miscellaneous Sources: Paved Roads and Unpaved Roads). Site haulroads will consist of unpaved roads only.

Table 2d: Fugitive Emissions – Haulroads

Fugitive Emissions Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Unpaved Haulroads	Total Particulate Matter	63.06	15.23
	PM_{10}	18.60	4.49
	$PM_{2.5}$	1.88	0.46

Counter Flow Drum Mixer

The counter flow drum mixer (CFDM1) is vented directly to the inertial separator (APCD1) which vents to the baghouse (APCD2). The baghouse is an ASTEC PEBH-52 Pulse Jet with a total cloth area of 13,949 ft^2.

Table 2e: Counter Flow Drum Mixer

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
CFDM1 (Emission Point 1E)	Carbon Monoxide	39.00	13.00
	Nitrogen Oxides	16.50	5.50
	Sulfur Dioxide	17.40	5.80
	Total Particulate Matter	17.91	5.97
	PM_{10}	4.12	1.37
	$PM_{2.5}$	0.99	0.33
	Volatile Organic Compounds	9.60	3.20
	Acetaldehyde	0.39	0.13
	Benzene	0.12	0.04
	Ethylbenzene	0.07	0.02
	Formaldehyde	0.93	0.31
	Toluene	0.87	0.29
	Xylene	0.06	0.02
	PAH HAPs Total	0.26	0.09
	Non-PAH HAPs Total	2.85	0.95
	Total VOC HAPs	3.11	1.04
	Metal HAPs Total	0.0373	0.0126
	TOTAL HAPs	3.15	1.05

Asphalt Heater

Annual emissions were calculated assuming the heater will run (7,560 hours per year) and fuel consumption is 1,350 scf/hr. Emission factors from AP-42, Tables 1.4-1 and 1.4-2, Natural Gas Combustion, 7/98.

Table 2f: Asphalt Heater

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
AH1 (Emission Point 2E)	Carbon Monoxide	0.11	0.43
	Nitrogen Oxides	0.14	0.51
	Sulfur Dioxide	0.001	0.003
	Total Particulate Matter/PM_{10}/$PM_{2.5}$	0.01	0.04
	Volatile Organic Compounds	0.01	0.03
	TOTAL HAPs	0.0025	0.0096

Portable Fractionated Reclaimed Asphalt Pavement (FRAP) Processing Unit

The Prosizer 3100 is a portable plant that processes milled RAP. It consists of a horizontal shaft impactor, a double deck screen, four (4) belt conveyors, a radial stacker, a feed hopper/bin, and an engine for electrical and hydraulic power. The plant is capable of 200 tons per hour (tph) and will be limited to 50,000 tons per year (tpy).

Table 3a: Engine Emissions (Prosizer 3100)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
F-ENG1 (Emission Point F-1E)	Carbon Monoxide	1.22	0.31
	Nitrogen Oxides	5.65	1.42
	Sulfur Dioxide	0.37	0.09
	Total Particulate Matter/PM_{10}/$PM_{2.5}$	0.40	0.10
	Volatile Organic Compounds	0.46	0.12
	Formaldehyde	0.0015	0.0004
	TOTAL HAPs	0.0049	0.001

* Emission factors from AP-42 Table 3.3-1(Criteria Pollutants) and Table 3.3-2 (HAPS)

Table 3b: FRAP Material Handling, Crushing and Screening (Prosizer 3100)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
FRAP Material Handling	Total Particulate Matter	2.64	0.35
	PM_{10}	1.26	0.17
	$PM_{2.5}$	0.19	0.03
FRAP Crushing and Screening	Total Particulate Matter	1.08	0.14
	PM_{10}	0.39	0.05
	$PM_{2.5}$	0.08	0.02

Tanks

Tanks T1 (30,000 gal) will be utilized to store asphaltic cement. Tank T2 (1,000 gal) will store diesel fuel for usage in mobile equipment (endloaders, material transport trucks, and company vehicles).

SUMMARY OF EMISSIONS:

Table 4: Proposed Facility Emissions (R13-3395)

Emission Type	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
Total Particulate Matter	114.37	25.74
Fugitive (Haulroads & Stockpiles)	63.08	15.33
PM_{10}	33.74	9.27
Fugitive (Haulroads & Stockpiles)	18.61	4.54
$PM_{2.5}$	4.37	1.27
Fugitive (Haulroads & Stockpiles)	1.89	0.47
VOC	22.22	7.28
SO_2	17.77	5.89
NOx	22.29	7.43
CO	41.78	14.23
Acetaldehyde	0.39	0.13
Benzene	0.13	0.04
Ethylbenzene	0.08	0.02
Toluene	0.88	0.29
Xylene	0.09	0.03
Formaldehyde	1.01	0.34
Total HAPs	3.32	1.12

REGULATORY APPLICABILITY

PSD has no applicability to the proposed facility. The proposed construction of a hot mix asphalt plant is subject to the following state and federal rules:

45CSR2 *To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

The purpose of this rule is to establish limitations for smoke and particulate matter which are discharged from fuel burning units. Per this rule, Section 2.14 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.10 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. The facility is exempt from sections 4, 5, 6, 8, and 9 because the asphalt heater classifies as a fuel burning unit(s) having a heat input under ten (10) million B.T.U.'s per hour. The facility will be subject to the opacity requirements in this rule, which is 10% opacity based on a six minute block average.

45CSR3 To Prevent and Control Air Pollution from the Operation of Hot Mix Asphalt Plants

The purpose of this rule is to establish emission limitations for hot mix asphalt plants and the plant property. The facility is subject to this rule because it meets the definition of Hot Mix Asphalt Plant as found in Section 2.14. The facility must meet visible emission limits of 40% opacity during start-up or shutdown and 20% opacity during operations of any fuel burning equipment. The facility shall be operated and maintained in a manner as to prevent emission of particulate matter from any point other than a stack outlet. The facility will utilize water sprays, minimized drop heights, partial enclosures, full enclosures, and a baghouse to minimize particulate emissions. Opacity monitoring, recordkeeping, and reporting requirements are included in permit R13-3395.

45CSR7 To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associate Operations

The purpose of this rule is to prevent and control particulate matter air pollution from manufacturing processes and associated operations. The facility is subject to the requirements of this rule because it meets the definition of "Manufacturing Process" found in Section 2.20 of this rule. The facility will need to be in compliance with Subsection 3.1 – no greater than 20% opacity (opacity monitoring, recordkeeping, and reporting requirements are included in permit 13-3395); Subsection 3.7 – no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure (hot mix asphalt storage silos BS1 and BS2 will be fully enclosed); Subsection 4.1 – PM emissions shall not exceed those under Table 45-7A (see paragraph below); Subsection 5.1 – manufacturing process and storage structures must be equipped with a system to minimize emissions (separator/baghouse APCD1/APCD2 controls emissions from the hot mix asphalt plant CFDM1); Subsection 5.2 – minimize PM emissions from haulroads and plant premises (water sprays will be utilized to control these emissions).

According to Table 45-7A, for a type 'a' source with a maximum process weight rate of 600,000 lb/hr, the maximum allowable emission rate is 50 lb/hr of particulate matter. The proposed maximum point source emission rate at the facility is 22.01 lb/hr of particulate matter according to calculated emissions in permit application R13-3395.

45CSR10 To Prevent and Control Air Pollution from Emissions of Sulfur Oxides

The purpose of this rule is to prevent and control air pollution from the emission of sulfur oxides. Per this rule, Section 2.9 defines an indirect heat exchanger as a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. Section 2.8 defines a fuel burning unit as any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. This facility is exempt from sections 3 and 6 through 8 because the source operation classifies as a fuel burning unit(s) having a heat input under ten (10) million B.T.U.'s per hour. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume (this requirement should be met with natural gas as fuel for all burners).

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source and to relocate non-major stationary sources within the state of West Virginia.

The applicant is applying for a Rule 13 construction permit for the Ravenswood facility pursuant to Section 2.24. The facility is subject to the following sections of this rule: reporting requirements, requirements for construction of stationary sources, demonstrating compliance with

stationary sources, public review procedures, and permit application fees. The facility will demonstrate compliance by following all the applicable rules and regulations that apply to the facility. They will also follow the terms and conditions set forth in permit R13-3395. The permittee published a Class I legal advertisement in the Jackson Newspapers on January 19, 2018 and submitted an application fee of $2,000.00, which includes the $1,000.00 NSPS fee.

45CSR16 Standards of Performance for New Stationary Sources

This rule establishes and adopts standards of performance for new stationary sources promulgated by the United States Environmental Protection Agency pursuant to section 111(b) of the federal Clean Air Act, as amended (CAA). The facility is subject to 40cfr60 Subparts I, OOO and IIII.

40CFR60 Subpart I: Standards of Performance for Hot Mix Asphalt Facilities

The facility is subject to this Subpart because it meets the definition of "hot mix asphalt facility" as defined in 60.91(a) – hot mix asphalt facility means any facility used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements and consisting of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems. Permit 13-3395 requires opacity testing, which must demonstrate opacity values of 20% or under.

40CFR60 Subpart OOO: Standards of Performance for Nonmetallic Minerals Processing Plant

In addition to nonmetallic minerals processing plants, provisions of this subpart also apply to crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart. Therefore, the crusher, screens, conveyors and bins associated with RAP processing are subject to this subpart. The facility shall be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices (all control methods shown in equipment table) proposed within application R13-3395 are in operation.

45CFR60 Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Southern West Virginia Asphalt, Inc. is subject to this subpart because F-ENG1 was manufactured after April 1, 2006. The engine emissions for F-ENG1 [F-1E, John Deere 6068HFC93A, 173 hp CI RICE, mfg.date of 5/17/2013] is EPA Interim Tier IV Certified, Certificate Number: DJDXL06.8210-019.

40CFR63 Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Southern West Virginia Asphalt, Inc. is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because F-ENG1 is considered a new area source of HAPs since it will be constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart IIII.

The proposed construction of Southern West Virginia Asphalt, Inc.'s Hot Mix Asphalt and portable RAP processing facilities is not subject to the following state and federal rules:

45CSR14 *Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration*

In accordance with 45CSR14 Major Source Determination, the proposed Hot Mix Asphalt and portable RAP processing facilities are not listed in Table 1. The facilities will have a total potential to emit 51.29 TPY of a regulated air pollutant (PM), not including fugitive emissions, which is less than the 45CSR14 threshold of 250 TPY. This facility is not listed in Table 2, and so fugitive emissions are not included when determining source applicability. Therefore, the proposed construction is not subject to the requirements set forth within 45CSR14.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Acetaldehyde:
Acetaldehyde is mainly used as an intermediate in the synthesis of other chemicals. It is ubiquitous in the environment and may be formed in the body from the breakdown of ethanol. Acute (short-term) exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic (long-term) intoxication of acetaldehyde resemble those of alcoholism. Acetaldehyde is considered a probable human carcinogen (Group B2) based on inadequate human cancer studies and animal studies that have shown nasal tumors in rats and laryngeal tumors in hamsters.

Benzene:
Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A, human carcinogen.

Ethyl Benzene:
Ethyl benzene is mainly used in the manufacturing of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects, such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans. In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

Formaldehyde:
Formaldehyde is used mainly to produce resins used in particle board products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

Toluene:
The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory

failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. `Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies.

Xylene:
Commercial or mixed xylene usually contains about 40-65% m-xylene and up to 20% each of o-xylene and p-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and location of this facility and the limit of the proposed construction. This facility is located in Jackson County, West Virginia, which is designated as attainment for PM2.5 (particulate matter less than 2.5 microns in diameter). The facility is a minor source and not subject to 45CSR14.

RECOMMENDATION TO DIRECTOR

The information contained in the permit application R13-3395 indicates that compliance with all applicable state rules and federal regulations should be achieved when all proposed control methods are in operation. Therefore, the granting of a permit to Southern West Virginia Asphalt, Inc. for the construction of a hot mix asphalt facility located in Ravenswood, Jackson County, West Virginia, is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

February 16, 2018
Date