



**west virginia department of environmental protection**

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**ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Application No.: G20-B037  
Plant ID No.: 083-00011  
Applicant: Southern West Virginia Asphalt, Inc.  
Facility Name: Elkins Plant #50  
Location: Kelly Mountain Road, Randolph County  
NAICS Code: 324121  
Application Type: Modification  
Received Date: October 21, 2014  
Engineer Assigned: Thornton E. Martin Jr.  
Fee Amount: \$1,500.00  
Date Received: October 23, 2014  
Complete Date: November 24, 2014  
Applicant Ad Date: October 21, 2014  
Newspaper: *The Inter-Mountain*  
UTM's: Easting: 606.853 km Northing: 4,305.887 km Zone: 17  
Description: Applicant proposes to replace the existing batch plant and associated equipment with a new Double-barrel Dryer/Drum Mixer Plant (CFDM1) and its' associated equipment as well as change the permit from an individual permit to a general permit.

DESCRIPTION OF PROCESS

Southern West Virginia Asphalt, Inc. (SWVA) is proposing to convert their existing individual permit (R13-1475E) for their Hot Mix Batch Plant to a general permit (G20-B037). The applicant has requested the change to coincide with their plans to replace primary plant equipment.

Aggregates (including RAP) are brought to the asphalt plant stockpile area via truck and dumped into one of three stockpiles, OS1/N, OS2/N or OS3/N (TP1/MD). Aggregates other than RAP are unloaded from stockpiles OS1/N and OS2/N with an endloader and dumped into aggregate cold feed bins B1/PE through B5/PE (TP2/MD), then onto belt conveyor BC1/N (TP3/PE), which transports the aggregates to the double-deck scalping screen S1/PE (TP4/PE). Oversized materials fall to the ground (TP5/N) and sized material is transferred to belt conveyor BC2/N (TP6/PE) that transports it to the Double-Barrel Dryer/Drum Mixer CFDM1/APCD1 and APCD2 [1E] (TP7/PE). The dryer/drum mixer is vented to the inertial separator APCD1, which vents to the baghouse APCD2 [1E]. The dryer/drum mixer CFDM1 burner is fueled by used oil (T3) or propane (T4) or #2 fuel (T5).

RAP is sized using the existing RAP crushing system (re-numbered for this application) or the existing portable FRAP crushing and screening system. With the existing RAP crushing system, RAP is unloaded from raw RAP stockpile OS3/N with an endloader and dumped into RAP hopper BS6/PE (TP8/MD). From this hopper, the material drops onto conveyor belt BC3/N (TP9/PE), which transports the RAP to crusher CR1/FE (TP10/PE). The crushed RAP drops onto conveyor belt BC4/N (TP11/PE) that carries it to sized RAP stockpile OS4/N (TP12/MD). This portable RAP crushing system is powered by engine RAP-ENG1/N [3E]. This engine has powered the portable RAP crushing system since it was permitted, but was not included in previous permit applications. Crushed RAP is unloaded from OS4/N

with an endloader and dumped into RAP hopper BS7/PE (TP13/MD). The material leaves this bin and falls onto belt conveyor BC5/PE (TP14/PE), which transports the material to the RAP screen S2/PE (TP15/PE). Oversized RAP material falls onto the ground (TP16/N) and sized RAP falls onto belt conveyor BC6/N (TP17/PE) which moves the material to the dryer /drum mixer CFDM1 (TP18/PE).

When RAP is crushed using the portable FRAP system, RAP from existing RAP stockpile (OS3/N) is loaded into the feed hopper F-H1/PE by an endloader [F-TP1/MD]. The feed bins 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 unit is powered by a John Deere 6068H 173 hp engine (F-ENG1/N [F-1E]). 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 existing raw RAP stockpile OS3/N [F-TP6/N].

The smaller fractions from the screen are discharged to belt conveyor 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 OS4A/N [F-TP9/MD] and OS4B/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; not both at the same time. Material from F-RS1/N is transferred to OS4A/N or OS4B/N [F-TP12/MD]. From stockpiles OS4A/N and OS4B/N, material are transferred via endloader to the new stationary RAP hopper BS7/ [TP-13/MD].

When FRAP is transferred to the existing RAP system, the flop gate on the screen is opened so the fractionated RAP passes through the screen and is not double-processed.

HMA is transferred from CFDM1 directly to slat conveyor OT1/FE (TP19/PE), which transports the material to HMA silo BS8/FE, BS9/FE and BS10/FE (TP20/PE). From the HMA silos, the material is loaded into trucks (TP21/PE).

Particles from APCD1 and APCD2 are transferred to screw conveyor OT2/FE (TP22/FE) and back to the dryer/drum mixer CFDM1 via TP23/FE or to screw conveyor OT3/FE (TP24/FE) and then to dust silo BS11/FE (TP25/FE). From dust silo BS11/FE, dust is transferred to trucks via a fixed chute (TP26/PE).

Asphaltic cement tanks T1 and T2 are heated by asphalt heater AH1 [2E]. Used oil (fuel) is stored in tank T3, propane in tank T4 and #2 fuel in Tank T5.

Fine aggregate and coarse aggregate are brought to the asphalt plant stockpile area from the Kelly Mountain Quarry stone processing area on mostly graveled roads. RAP, asphaltic cement, No. 2 fuel oil, used oil and HMA are transported on the paved haulroad between the asphalt plant area and Kelly Mountain Road. The haulroads, stockpile area and work areas around the plant are sprayed with a water truck as needed to control dust.

Portions of fine aggregate, coarse aggregate, RAP/FRAP, and asphaltic cement differ depending on the desired characteristics of the mix being made by an asphalt plant. Emissions calculations for this application utilize the maximum throughputs of aggregates, RAP/FRAP and asphaltic cement needed to make any type of mix. These calculations over-estimate the amounts of these materials that will actually be used but, ensure that all mix scenarios are accounted for.

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

Table 1: Equipment Summary

Equipment ID No.	Emission Point ID	Description	Installation / Modification Date	Maximum Capacity		Control Device <sup>1</sup>
<b>FRAP System</b>						
F-H1		FRAP Feed Hopper	2014	200 tons/hr	75,000 tons/yr	PE
F-BC1		FRAP Belt Conveyor	2014	200 tons/hr	75,000 tons/yr	PE
F-S1		FRAP Screen	2014	200 tons/hr	75,000 tons/yr	FE
F-BC2		FRAP Belt Conveyor	2014	75 tons/hr	30,000 tons/yr	N
F-CR1		FRAP Crusher	2014	75 tons/hr	30,000 tons/yr	FE
F-BC3		FRAP Belt Conveyor	2014	200 tons/hr	75,000 tons/yr	N
F-BC4		FRAP Belt Conveyor	2014	200 tons/hr	75,000 tons/yr	N
F-RS1		FRAP Radial Stacker	2014	200 tons/hr	75,000 tons/yr	N
F-ENG1	F-1E	FRAP Engine (John Deere 6068HFC93A-mfg. date 5/17/2013, 173 HP, EPA Interim Tier 4)	2014	9.28 gal/hr	3,712 gal/yr	N
<b>RAP System</b>						
OS3		RAP Stockpile - Raw	2014	75,000 tons	75,000 tons/yr	N
BS6		RAP Hopper - Raw	2010	20 tons	75,000 tons/yr	PE
BC3		RAP Belt Conveyor - Raw	2010	100 tons/hr	75,000 tons/yr	N
CR1		RAP Crusher	2010	100 tons/hr	75,000 tons/yr	FE
BC4		RAP Belt Conveyor - Sized	2010	100 tons/hr	75,000 tons/yr	N
OS4, 4A & 4B		Sized RAP Stockpiles	2014	75,000 tons	75,000 tons/yr	N
RAP-ENG1	3E	RAP Engine (John Deere 6125, Mfg. Date 7/22/98, 325 HP)	2010	16.60 gal/hr	12,450 gal/yr	N
BS7		RAP Hopper - Sized	2010	100 tons/hr	75,000 tons/yr	PE
S2		RAP Screen	2014	100 tons/hr	75,000 tons/yr	PE
BC5		RAP Belt Conveyor - Sized	2014	100 tons/hr	75,000 tons/yr	N
BC6		RAP Belt Conveyor - Sized	2014	100 tons/hr	75,000 tons/yr	N
<b>HMA System</b>						
OS1		Cold Aggregate Stockpile – Coarse	2014	15,000 tons	250,000 tons/yr	N
OS2		Cold Aggregate Stockpile – Fine	2014	15,000 tons		N
BS1		Cold Feed Bin	2014	30 tons		PE
BS2		Cold Feed Bin	2014	30 tons		PE
BS3		Cold Feed Bin	2014	30 tons		PE
BS4		Cold Feed Bin	2014	30 tons		PE
BS5		Cold Feed Bin	2014	30 tons	PE	
BC1		Belt Conveyor	2014	300 tons/hr	250,000 tons/yr	N
BC2		Belt Conveyor	2014	300 tons/hr	250,000 tons/yr	N
CFDM1	1E	Double Barrel Countertlow Dryer/Drum Mixer with Whisper Jet75 mmBTU/hr Burner	2014	300 tons/hr	250,000 tons/yr	APCD1 & APCD2
S1		Double Deck ASTEC PSS-412-60	2014	300 tons/hr	250,000 tons/yr	APCD1 & APCD2
OT1		HMA Slat Conveyor	2014	300 tons/hr	250,000 tons/yr	FE
BS8		HMA Storage Silo	2014	200 tons	250,000 tons/yr	FE
BS9		HMA Storage Silo	2014	200 tons		FE
BS10		HMA Storage Silo	2014	200 tons		
OT2		Baghouse Screw Conveyor	2014	6 ton/hr	5,000 tons/yr	FE
OT3		Screw Conveyor	2014	3 ton/hr	2,500 tons/yr	FE
BS11		Baghouse Dust Silo	2014	20 tons	2,500 tons/yr	FE
<b>Tanks</b>						
T-1		Asphaltic Cement Tank	2014	35,000 gal	3,460,208 gal/yr	N
T-2		Asphaltic Cement Tank	2014	35,000 gal		N
T-3		Fuel Storage Tank – Used Oil	2014	20,000 gal	510,000 gal/yr	N
T-4		Fuel Storage Tank – Propane	2014	30,000 gal	780,000 gal/yr	N
T-5		Fuel Storage Tank - #2 fuel oil	2014	15,000 gal	510,000 gal/yr	N
AH-1	2E	Asphalt Heater – Propane	2014	21.74 gal/hr	1,380 hr/yr	N

<sup>1</sup> FE - Full Enclosure; PE - Partial Enclosure; N - None; APCD1 – Inertial Separator; APCD2 -- Baghouse

## SITE INSPECTION

Karl Dettinger of the Compliance and Enforcement section of the Eastern Panhandle Regional Office performed a full on-site inspection on July 16, 2012. The facility received a score of 30 - Facility in Compliance. The next inspection is scheduled to be conducted before the end of July, 2015.

Directions in application: US-119 South to Old Hwy 119 exit for 2.1 miles. Turn right (south) onto CR-9/01 (Whitman Creek Rd.) For 1.9 miles. Plant entrance is located on the left.

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The Kelly Mountain facility will operate at a maximum production rate of 300 tons per hour and 250,000 tons per year of asphalt. The facility will be limited to a process rate of 100 tons per hour and 75,000 tons per year of RAP.

Emissions were calculated by Potesta & Associates, Inc. on behalf of the applicant and checked for accuracy and completeness by the writer. Emissions for the various components/processes/equipment were derived using the WVDAQ G40-C Emissions Worksheet whenever possible. Tank emissions were calculated using TANKS 4.0.9d. Engine emissions were calculated using emission factors from AP-42, Table 3.3-1 (Criteria Pollutants) and Table 3.3-2 (HAPS). Engine emissions are based on 750 hours per year for RAP-ENG1 and 400 hours per year for F-ENG1. The following tables outline the estimated emissions for various components and a summary for the facility:

### *Engines*

Table 1a: Existing portable RAP Engine Emissions (RAP-ENG1)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
RAP-ENG1 (Emission Point 3E)	Carbon Monoxide	2.18	0.82
	Nitrogen Oxides	10.10	3.79
	Sulfur Dioxide	0.66	0.25
	Total Particulate Matter	0.71	0.27
	PM <sub>10</sub>	0.71	0.27
	Volatile Organic Compounds	0.82	0.31
	Formaldehyde	0.0027	0.0010
	TOTAL HAPs	0.0087	0.003

Table 1b: FRAP Engine Emissions (F-ENG1)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
F-ENG1 (Emission Point F-1E)	Carbon Monoxide	1.22	0.24
	Nitrogen Oxides	5.65	1.13
	Sulfur Dioxide	0.37	0.07
	Total Particulate Matter	0.40	0.08
	PM <sub>10</sub>	0.40	0.08
	Volatile Organic Compounds	0.46	0.09
	Formaldehyde	0.0015	0.0003
	TOTAL HAPs	0.0049	0.001

*Asphalt Heater*

Annual emissions were calculated assuming the heater will run (1,380 hours per year) and use 22 gal/hr of propane. Emission factors for the calculations were taken from AP-42, Table 1.5-1 Propane.

**Table 2: Asphalt Heater**

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
AH1 (Emission Point 2E)	Carbon Monoxide	0.163	0.11
	Nitrogen Oxides	0.283	0.20
	Sulfur Dioxide	0.022	0.02
	Total Particulate Matter	0.015	0.01
	PM <sub>10</sub>	0.015	0.01
	Volatile Organic Compounds		
	Total HAPs		

*Tanks*

Tanks T1 (35,000 gal) and T2 (35,000 gal) will be utilized to store asphaltic cement. Tank T3 (20,000 gal) will store used oil. Tank T4 (30,000 gal) will store propane and T5 (15,000 gal) will store diesel fuel for use in mobile/portable equipment (endloaders, material transport trucks, and RAP processing engines).

The proposed facility emissions are summarized in the following tables 3a and 3b:

**Table 3a: Proposed Criteria Pollutant Emissions Summary (G20-B037)**

Source G20-B037	PM		PM <sub>10</sub>		VOC		SO <sub>2</sub>		NO <sub>x</sub>		CO	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Haulroads	27.49	10.62	6.94	2.72								
Stockpiles	0.05	0.07	0.03	0.03								
<i>Fugitives Total</i>	<i>27.54</i>	<i>10.69</i>	<i>6.97</i>	<i>2.75</i>								
Materials Handling	3.67	1.31	1.83	0.67								
Crush & Screening	8.57	3.36	2.57	0.81								
Asphalt Heater	0.015	0.01	0.015	0.01	NA	NA	0.022	0.02	0.283	0.2	0.163	0.11
Dryer	19.74	8.23	4.53	1.89	9.60	4.00	17.40	7.25	16.50	6.88	39.00	16.25
Silo Filling/ Loadout	0.17	0.08	0.04	0.02	4.83	2.01					0.75	0.32
Engines	1.11	0.35	1.11	0.35	1.28	0.40	1.03	0.32	15.75	4.92	3.40	1.06
Tanks					0.0065	0.0065						
<i>Point Source Total</i>	<i>33.28</i>	<i>13.34</i>	<i>10.1</i>	<i>3.75</i>	<i>15.72</i>	<i>6.417</i>	<i>18.45</i>	<i>7.59</i>	<i>32.53</i>	<i>12</i>	<i>43.31</i>	<i>17.74</i>
<b>FACILITY</b>	<b>60.82</b>	<b>24.03</b>	<b>17.07</b>	<b>6.50</b>	<b>15.72</b>	<b>6.417</b>	<b>18.45</b>	<b>7.59</b>	<b>32.53</b>	<b>12.00</b>	<b>43.31</b>	<b>17.74</b>

Table 3b: Proposed Hazardous/Toxic Pollutant Emissions Summary (G20-B037)

Source G20-B037	Acetaldehyde		Benzene		Ethylbenzene		Toluene		Xylene		Formaldehyde	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Dryer	0.39	0.16	0.12	0.05	0.08	0.03	0.87	0.36	0.06	0.03	0.93	0.39
Asphalt Heater	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silo Filling and Loadout	NA	NA	0.0006	0.0003	0.0035	0.0015	0.0026	0.0011	0.0061	0.0025	0.0011	0.0005
Engines	0.0028	0.0009	0.0033	0.0010	NA	NA	0.0014	0.0004	0.0011	0.0004	0.0042	0.0013
TOTAL	0.39	0.16	0.12	0.05	0.08	0.03	0.87	0.36	0.07	0.03	0.94	0.39

Table 4: Proposed Change in Emissions

Emission Type	Annual Emissions R13-1475E (tons/yr)	Annual Emissions G20-B037 (tons/yr)	Change in Emissions (tons/yr)
Total Particulate Matter	25.79	24.03	-1.76
Fugitive (Haulroads & Stockpiles)	11.56	10.69	-0.87
PM <sub>10</sub>	6.97	6.50	-0.47
Fugitive (Haulroads & Stockpiles)	3.06	2.75	-0.31
PM <sub>2.5</sub>	1.58	1.56	-0.02
Fugitive (Haulroads & Stockpiles)	0.43	0.42	-0.01
VOC	6.14	6.42	0.28
SO <sub>2</sub>	10.21	7.59	-2.62
NOx	18.32	12.00	-6.32
CO	45.39	17.74	-27.65
Acetaldehyde	0.04	0.16	0.12
Benzene	0.04	0.05	0.01
Ethylbenzene	0.25	0.03	-0.22
Toluene	0.12	0.36	0.24
Xylene	0.32	0.04	-0.28
Formaldehyde	0.10	0.40	0.30
Total HAPs	0.95	1.33	0.38

## REGULATORY APPLICABILITY

PSD has no applicability to the proposed facility. The proposed modification 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 will not produce more than six hundred (600) pounds per hour of particulate matter to be discharged into the open air. 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 G20-B037.

### *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; 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 BS8, BS9 and BS10 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 33.28 lb/hr of particulate matter according to calculated emissions in permit application G20-B037.

*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 because the source operation will have the potential to emit less than 500 pounds per year of sulfur oxides. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume (included in permit as 4.1.3.(e)).

*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 modification to/and converting from a Rule 13 permit to a general permit for the Kelly Mountain facility pursuant to Section 2.24.e. The facility is subject to the following sections of this rule: reporting requirements, requirements for modifications 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 G20-B037. The applicant published a Class I legal advertisement in the *The Inter-Mountain* on October 21, 2014 and submitted an application fee of \$1,500.00, which includes \$1,000.00 NSPS fees.

*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 G20-B037 requires opacity testing, which will show 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 crushers, 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 G20-B037 are in operation.

*45CFR60 Subpart III—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 RAP-ENG1 and F-ENG1 are 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 III.

The proposed modification of Southern West Virginia Asphalt, Inc.'s existing aggregate processing facility 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 modification and aggregate processing facilities are not listed in Table 1. The facility will have a total potential to emit 24.03 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 modification. This facility is located in Randolph 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.

CHANGES TO PERMIT R13-1475E

The following changes are proposed in the G20-B037 permit application:

- Replace existing Batch Plant and associated equipment as identified in Table 1: Equipment Summary
- Convert from a Rule 13 Individual Permit to a G20-B General Permit

RECOMMENDATION TO DIRECTOR

The information contained in the permit application G20-B037 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 modification of a hot mix asphalt facility located in Elkins, Randolph County, West Virginia, is hereby recommended.

  
Thornton E. Martin Jr.  
Permit Engineer

November 24, 2014  
Date