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GENERAL PERMIT REGISTRATION APPLICATION ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Registration No.:	G20-B039
Plant ID No.:	077-00107
Applicant:	Stone Asphalt, LLC
Facility Name:	Reedsville Facility
Location:	Reedsville, Preston County
SIC Code:	2951
NAICS Code:	324121
Application Type:	Construction
Received Date:	April 28, 2016
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$1500.00
Assigned Date:	April 29, 2016
Complete Date:	June 01, 2016
Applicant Ad Date:	May 03, 2016
Newspaper:	*The Preston County Journal*
UTM's:	Easting: 603.835 km Northing: 4375.194 km Zone: 17
Description:	Applicant proposes to construct a stationary Hot Mix Asphalt Plant.

PROCESS DESCRIPTION (taken from the Application)

Stone Asphalt, LLC, proposes to construct a Hot Mix Asphalt Plant at a new site near Reedsville, WV. This site will have the potential to process up to 394,200 tons/year. All materials (Limestone Aggregates) proposed to be brought onto the site will have already been through a crusher and screen at the mine site. This material will be placed in the stockpile area. From the stockpile areas, the materials will be brought to the cold aggregate bins before being loaded via a conveyor to the drum. The material will be processed in the Hot Mix Asphalt Plant before being loaded out onto trucks that are transporting the material from the site.

The Almix Model ALB2000/160 transportable batch mix asphalt plant (BPRD-1) utilizes 5 cold feed aggregate bins providing partial enclosure control from wind erosion. A conveyor system collects the mixture from the bins to transfer to the counter flow dryer drum. Once in the drum, a

full enclosure assists with the prevention of emissions of particulate matter. A belt conveyor inside the drum has a full enclosure that transfers the material to the elevator. The transfer points at the bottom and top of the elevator are also protected by full enclosures. From the point the aggregate enters the plant until is is loaded into the truck to carry the final product off site, it is totally enclosed. A baghouse is also proposed to be in use with this operation that will provide an efficiency guarantee of 99.94% control.

Point source and fugitive emissions will be associated with the operation of the Batch plant. Specifically, point source emissions are associated with the rotary dryer and the hot screens, bins and mixer as the emissions are vented to a settling chamber (APCD-1) and then a baghouse (APCD-2) which exhausts to the atmosphere. The baghouse controls the particulate emissions, however it does not control point source emissions of carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO_2) and volatile organic compounds (VOC) which are associated with fuel combustion, fuel storage and drying operations.

Fugitive emissions of particulate matter will be generated by the conveying and transferring of aggregates. Fugitive emissions are also generated from vehicular traffic on unpaved roadways/working areas and from loading/unloading and wind erosion of storage piles (OS1 - OS8). Fugitive emissions from the storage pile operations are controlled by the inherently high moisture content of the raw materials and using low drop heights. Fugitive emissions from roadways and working areas will be controlled by a watering truck (WT).

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

TABLE 1: Equipment Summary (G20-B039)

Equipment ID No.	Description	Date of Change	AMR[2]	Maximum Capacity		Control Equipment[1]
				TPH	TPY	
Equipment						
BPRD-1	Almix Model ALB2000/160 Batch Mix Plant	2016	A	180	394,200	APCD-1, APCD-2
AH-1	Asphalt Heater – PNG (2,000 scf/hr, 2,190 hr/yr)	2016	A	----	----	N
Conveyors						
BC1	Cold Feed Belt Conveyor	2016	A	180	394,200	PE
Storage				**Tons**	**Tons/Yr**	
OS-1	1 ½" Crusher Run Limestone	2016	A	2500	35,000	N
OS-2	#4 Limestone Aggregate	2016	A	500	30,000	N
OS-3	#57 Limestone Aggregate	2016	A	500	30,000	N
OS-4	River Sand	2016	A	2000	56,000	N
OS-5	3/4" Crusher Run Limestone	2016	A	2500	65,000	N
OS-6	#8 Limestone Aggregate	2016	A	2500	161,000	N
OS-7	Natural Sand	2016	A	2500	95,000	N
OS-8	Reclaimed Asphalt Product	2016	A	4000	120,000	N
BS-1	Cold Feed Bin	2016	A	15	56,000	PE
BS-2	Cold Feed Bin	2016	A	15	65,000	PE
BS-3	Cold Feed Bin	2016	A	15	161,000	PE

Equipment ID No.	Description	Date of Change	A M R[2]	Maximum Capacity		Control Equip-ment[1]
				TPH	TPY	
BS-4	Cold Feed Bin	2016	A	15	95,000	PE
BS-5	Cold Feed Bin	2016	A	15	17,200	PE
BS-6	HMA Silo	2016	A	100	394,200	FE
Tanks				**Gallons**	**Gal/Yr**	
T-1	Storage Tank – Asphalt Cement	2016	A	13,210	22,469	N
T-2	Storage Tank – Asphalt Cement	2016	A	13,210	22,469	N

[1] FE - Full Enclosure; PE - Partial Enclosure; APCD-1 - Cyclone; APCD-2 - Baghouse; N - None
[2] A - Addition, M - Modification or No Change, R - Removal

SITE INSPECTION

According to the application and area maps, the proposed facility will reside at 98 Comfort Drive in Reedsville, Preston County, West Virginia. This is a rural area and the proposed location/property will be in the vicinity of other businesses, vacant wooded areas and farm land. The Applicant submitted a Siting Criteria Waiver (Jason Peaslee) for a dwelling located within 300' of the proposed site, therefore, meeting G20-B siting criteria.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for operations, transfer points, storage piles and unpaved haulroads are based on AP-42 Fifth Edition, for "Batch Mix Asphalt Plants". The estimated emission calculations were performed by the Applicants' consultant and were checked for accuracy and completeness by the writer.

The proposed construction will result in an estimated potential to discharge controlled emissions of 39.79 TPY of PM (particulate matter), of which 15.26 TPY are PM_{10} (particulate matter less than 10 microns in diameter). Other estimated emissions include: VOC of 1.62 TPY, SO_2 of 0.91 TPY, NOx of 4.93 TPY and CO of 78.84 TPY. Refer to the following table for a complete summary of the proposed facility emissions:

TABLE 2: Criteria Pollutant Emission Summary (Based on 2,190 hours/year of operation)

Source	Nitrogen Oxides		Carbon Monoxide		Volatile Organic Compounds		Sulfur Dioxide		Particulate Matter		Particulate Matter-10	
	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									31.54	27.92	9.31	8.24
Material Handling									10.49	3.59	4.96	1.70
Dryer and Asphalt Heater	4.5	4.93	72.0	78.84	1.48	1.62	0.83	0.91	7.56	8.28	4.86	5.32
TOTAL	*4.5*	*4.93*	*72*	*78.84*	*1.48*	*1.62*	*0.83*	*0.91*	*49.59*	*39.79*	*19.13*	*15.26*

TABLE 3: Hazardous/Toxic Pollutant Emission Summary (Based on 2,190 hours/year of operation)

Source	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	0.13	0.12	0.069	0.063	0.65	0.59	0.35	0.32	0.85	0.77	0.17	0.15
Asphalt Heater	NA	NA	4.2E-6	4.6E-6	NA	NA	6.8E-6	7.4E-6	NA	NA	1.5E-4	1.6E-4
Total	0.13	0.12	0.07	0.06	0.65	0.59	0.35	0.32	0.85	0.77	0.17	0.15

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed construction of the hot mix asphalt facility is subject to the following state rules and federal regulations:

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 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 a cyclone and baghouse to minimize particulate emissions.

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.; Subsection 4.1 – PM emissions shall not exceed those under Table 45-7A (see paragraph below); Subsection 5.1 – manufacturing process must be equipped with a system to minimize emissions (cyclone APCD-1 and baghouse APCD-2 control emissions from the Batch mix plant BPRD-1); Subsection 5.2 – minimize PM emissions from haulroads and plant premises (water truck will be utilized to control these emissions).

According to Table 45-7A, for a type 'a' source with a maximum process weight rate of 360,000 lb/hr, the maximum allowable emission rate is approximately 42 lb/hr of particulate matter. The proposed maximum point source emission rate at the facility is 7.16 lb/hr of particulate matter according to calculated emissions in permit application G20-B039.

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. According to section 4.1., sulfur dioxide concentrations must fall below 2,000 parts per million by volume.

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 General Permit to Construct for the Reedsville facility. 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-B039. The applicant published a Class I legal advertisement in *The Preston County Journal* on May 03, 2016 and submitted an application fee of $1,500.00.

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 Subpart I.

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.

The proposed construction of Stone Asphalt, LLC's hot mix asphalt 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 hot mix asphalt facility are not listed in Table 1. The facility will have a total potential to emit 2.74 TPY of a regulated air pollutant (PM), not including fugitive emissions, which is less than the 45CSR14 threshold of 250 TPY. Therefore, the proposed construction is not subject to the requirements set forth within 45CSR14.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Small amounts of non-criteria regulated hazardous or toxic air pollutants such as benzene, ethylbenzene, toluene, xylenes and formaldehyde may be emitted during the production of hot mix asphalt. Due to the small amounts emitted, these non-criteria regulated hazardous/toxic pollutants should not adversely impact an applicable ambient air quality standard or cause or contribute to degradation of public health and welfare. A toxicity analysis would be required when the Director determines the facility may interfere with attainment or maintenance of an applicable ambient air quality standard or cause or contribute to degradation of public health and welfare.

AIR QUALITY IMPACT ANALYSIS

The facility will not be a major source as defined by 45CSR14. Based on the nature of the emissions and the annual emission rate, no air quality impact analysis was performed.

MONITORING OF OPERATIONS

Stone Asphalt, LLC will be required to monitor and maintain records of daily and yearly asphalt production, hours of operation, water truck water usage, type and amount of fuel used in the dryer, and asphalt heater. These records shall be maintained on site for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information contained in this General Permit Registration Application indicates that compliance with all applicable state rules and federal regulations should be achieved when all of the proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. Therefore, the granting of a permit to Stone Asphalt, LLC for the construction of a hot mix asphalt plant to be located in Reedsville, Mercer County, WV, is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

June 01, 2016
Date