

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



Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

west virginia department of environmental protection

G20-C GENERAL PERMIT ENGINEERING EVALUATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION,
RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF
HOT MIX ASPHALT PLANTS

APPLICATION NO.: G20-C041

FACILITY ID: 037-00013

CONSTRUCTION
 MODIFICATION
 RELOCATION

CLASS I ADMINISTRATIVE UPDATE
 CLASS II ADMINISTRATIVE UPDATE

BACKGROUND INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): W - L Construction & Paving, Inc.

Federal Employer ID No. (FEIN): Not available in ESS

Applicant's Mailing Address: 175 John J. Thomas Way

City: Charles Town

State: West Virginia

ZIP Code: 25144

Facility Name: Millville HMA Plant

Primary Operating Site Physical Address: Bradstone Lane
If none available, list road, city or town and zip of facility.

City: Millville

Zip Code: 25432

County: Jefferson

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):

Latitude: 39.29680

Longitude: -77.79510

SIC Code: 2951

NAICS Code: 324121

Date Application Received: August 4, 2023

Fee Amount: \$1,500.00

Date Fee Received: August 4, 2023

Applicant Ad Date: August 9, 2023

Newspaper: *Spirit of Jefferson Advocate*

Date Application Complete: August 25, 2023

Due Date of Final Action: October 10, 2023

Engineer Assigned: Thornton E. Martin Jr.

Description of Permitting Action:

Construction and operation of a new hot mix asphalt plant. The plant capacity will be 350 tons/hour and 250,000 tons/year. The plant covered by this application (new plant) will replace the R13-1121A plant (existing plant) which will be removed. The two plants will not produce asphalt at the same time.

PROCESS DESCRIPTION

The following process description was taken from Registration Application G20-C041:

W-L Construction & Paving, Inc. (W-L Construction) purchased Jefferson Asphalt Products Co., Inc and Permit R13-1121A was transferred to W-L Construction effective September 23, 2022.

Sand and aggregate are transported to the site by truck and transferred to open stockpiles OS1/WS through OS8/WS (TP1/MD). An end loader transfers aggregate from OS1/WS through OS8/WS to cold feed bins B1/PE through B6/PE (TP3/MD), which then transfer the material to belt conveyors BC1/PE through BC6/PE (TP4/PE). The material drops onto collector belt conveyor BC7/N (TP5/PE), which carries the material to the scalping screen S1/PE (TP6/PE). The oversize material drops to the ground (TP7/PE) and the remaining material is transferred to belt conveyor BC8/N (TP8/PE) and on to the double-barrel drum mixer DBDM1/APCD1&APCD2 (TP9/FE).

Recycled asphalt pavement (RAP) is transported to the site by truck and transferred to open stockpile OS9/WS (TP2/MD). An end loader transfers RAP from OS9/WS to feed bins B7/PE and B8/PE (TP10/MD), then to belt conveyors BC9/PE and BC10/PE (TP11/PE). The RAP drops onto BC11/N (TP12/PE), which transfers it to belt conveyor BC12/N (TP13/PE) that carries it to the RAP screen S2/PE (TP14/PE). Oversize material is transferred to belt conveyor BC13/N (TP15/PE) which transfers it to the RAP crusher CR1/FE (TP16/FE). Crushed RAP drops onto belt conveyor B12/N (TP17/FE) that goes back to the RAP screen. From the RAP screen, material is transferred to belt conveyor BC14/N (TP18/FE), which takes it to the double-barrel drum mixer DBDM1/APCD1&APCD2 (TP19/FE).

Asphaltic cement is also added to the double-barrel drum mixer DBDM1/APCD1&APCD2 and prepared asphalt is transferred to drag line conveyor DL1/FE (TP20/PE) that carries the asphalt to either bulk silo BS1/FE or drag line conveyor DL2/FE (TP21/PE). From drag line conveyor DL2/FE, asphalt is transferred to either bulk silo BS2/FE or drag line conveyor DL3/FE (TP22/PE) and then on to bulk silo BS3/FE (TP23/PE). Prepared asphalt is loaded into trucks from BS1/FE, BS2/FE and BS3/FE (TP24/PE) for transport off the site.

Dust from the knock-down box and baghouse (APCD1&APCS2) leaves the baghouse via a screw conveyor SC1/FE (TP25/FE) and is re-introduced into the double-barrel drum mixer DBDM1/APCD1&APCD2 (TP26/FE). The baghouse vents via emissions point 1E. Asphaltic cement is stored in tanks T1 and T2. Both the burner on the double-barrel drum mixer and the hot oil heater AH1 (2E) are fueled by No. 2 Fuel oil or recycled used oil from tanks T3 and T4.

The facility shall be constructed and operated in accordance with the following equipment and control device information taken from registration application G20-C041 and any amendments thereto:

Equipment ID No.	Description	Maximum Capacity		Control Equipment ¹
		(ton/hr)	(ton/yr)	
Hot Mix Asphalt Plant				
DBDM1	2005 Astec Model RDB-8437 7' x 37' Double Barrel Drum Mixer Hauck Starjet SJ-580 Combination oil/gas burner 120 MMBtu/hr (870 gal/hr No.2FO, 863 gal/hr UO) 2,800 Hours/Year	350	250,000	APCD1 APCD2
B1 – B6	120 Ton Cold Aggregate and Sand Bins	---	250,000	PE
BC1 – BC6	Conveyors (transfers from B1-B6 to BC7)	350	250,000	PE
BC7	Conveyor (transfers B1-B6 to S1)	350	250,000	N
S1	Screen (Oversize drops to ground)	350	250,000	PE
BC8	Aggregate Feed Conveyor	350	250,000	N
BS1 – BS3	600 Ton Hot Mix Asphalt Storage Silos	---	250,000	FE

Equipment ID No.	Description	Maximum Capacity		Control Equipment ¹
		(ton/hr)	(ton/yr)	
RAP Process				
B7, B8	40 Ton RAP Bins	---	100,000	PE
BC9, BC10	Conveyors (transfers from B7, B8 to BC11)	100	100,000	PE
BC11	Conveyor (transfers from B7, B8 to BC12)	100	100,000	N
CR1	Crusher (crushes oversize to size)	100	100,000	FE
BC12	Conveyor (transfers RAP to S2)	100	100,000	N
S2	Screen (transfers pass-thru material to BC14)	100	100,000	PE
BC13	Conveyor (transfers oversize from S2 to CR1)	100	100,000	N
BC14	RAP Feed Conveyor	100	100,000	N
Heater				
AH1	Asphaltic Cement Tank Heater CEI-1500 – 2.115 MMBtu/hr			N
Storage Tanks				
T1	Asphaltic Cement		20,000 gal.	N
T2	Asphaltic Cement		35,000 gal.	N
T3	No. 2 Fuel Oil		10,000 gal.	N
T4	Recycled Used Oil		10,000 gal.	N
Open Stockpiles			(ton/yr)	
OS1 – OS8	Aggregates including Sand (130,700 ft ² , 15' high, 820,000 tons max. storage)		250,000	WS
OS9	RAP (87,120 ft ² , 15' high, 550,000 tons max. storage)		100,000	WS
Drag Link/Auger			(tons/yr)	
DL1-DL3	Drag Links (Silo Loading)		250,000	FE
SC1	Auger Conveyor		2,500	FE

¹ APCD1/APCD2 – Astec Model RBH-64:DB Inertial Separator and Baghouse (Pulse Jet; Cloth Area – 11,616 ft²; Air/Cloth Ratio – 5.5:1); FE – Full Enclosure; PE – Partial Enclosure; N – None; WS – Water Spray

Engines (Not Applicable)

Emission Unit ID#	Emission Unit Description (Make, Model, Engine Type, HP)	Calculation Methodology (e.g. mfg. data, AP-42, etc.)

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for this facility were performed by the Applicant’s consultant and checked for accuracy and completeness by the writer.

The dryer and associated emissions were calculated using emission factors from EPA’s AP-42., a “Compilation of Air Pollutant Emission Factors”, 5th edition, specifically Chapter 11.1 - “Hot Mix Asphalt Plants”. The emissions are based on throughputs of 350 TPH and 250,000 TPY (PM emissions reflect the use of a baghouse). Operating hours of the Asphalt Plant is estimated at 2,800 hours/year.

The asphalt heater emissions are calculated using emission factors from EPA’s AP-42., a “Compilation of Air Pollutant Emission Factors”, 5th edition, specifically Chapter 1, “External Combustion Sources”, Section 1.3, “Fuel Oil Combustion” and Section 1.11, “Waste Oil Combustion”. Operating hours of the Asphalt Heater is estimated at 5,760 hours/year. Hours of operation for asphalt heater are higher than the hours of operation for the asphalt plant to allow asphaltic cement and emulsion to stay warm during hours when the plant is not operational.

The individually speciated HAPS listed are based on DAQ’s G20 permit application. HAP emission factors taken from AP-42 Table 11.1-10 with the highest emission factor from No. 2 fuel, and waste oil-fired dryers used.

Crusher emission factors are from the DAQ General Permit G40-C Emissions Worksheet. Estimation of potential emissions from batch or continuous drop operations using predictive emission factor equation from AP-42 Aggregate Handling and Storage Piles, Section 13.2.4.3 (November 2006).

Stockpile emissions were calculated using the emission factor equation from the Air Pollution Engineering Manual (Storage Pile Wind Erosion (Active Storage)). The consultant’s reference of AP42 Section 11.2.3, Fugitive Emissions (May, 1983), Equation #2 is correct also. The updated Industrial Wind Erosion equation from AP-42 (2006) is not used because of additional assumptions required and resulting small numerical difference.

Estimated total facility emissions for this application (G20-C041) are summarized in the following table:

Facility Wide Potential Controlled Emissions

Pollutant	Facility Total		Point Source		Fugitive	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
PM-TSP	62.02	51.52	24.70	22.65	37.32	28.87
PM ₁₀	19.54	16.06	8.45	7.20	11.09	8.86
PM _{2.5}	3.14	3.71	2.00	2.78	1.14	0.93
CO	47.70	17.23	47.70	17.23	Not Applicable	
SO ₂	21.43	10.49	21.43	10.49		
NO _x	19.62	7.94	19.62	7.94		
VOC	29.65	10.62	29.65	10.62		
Benzene	0.14	0.05	0.14	0.05		
Ethylbenzene	0.10	0.04	0.10	0.04		
Toluene	1.03	0.37	1.03	0.37		
Xylene	0.12	0.05	0.12	0.05		
Formaldehyde	1.21	0.43	1.21	0.43		
Total HAPs	3.79	1.36	3.79	1.36		

REGULATORY APPLICABILITY

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units.

45CSR2 states that any fuel burning unit that has a heat input under ten (10) MMBTU/hr is exempt from Sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date. If the individual heat input of all of the proposed fuel burning units are below 10 MMBTU/hr, these units are exempt from the aforementioned sections of 45CSR2. However, the registrant would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average. Fuel burning units greater than 10 MMBTU/hr are ineligible for registration under General Permit G20-C.

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
AH1	Asphaltic Cement Tank Heater CEI-1500	2.115

45CSR3 (To Prevent and Control Particulate 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 and a baghouse to minimize particulate emissions.

Does the registrant meet this rule? Yes No

45CSR7 (To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations)

45CSR7 applies to the registrant because the facility meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. General Permit G20-C requires that the registrant is in compliance with Section 3 (less than 20% opacity), Section 4 (particulate matter weight emission standard) and Section 5 (fugitive dust control system and dust control of the premises and access roads) when the particulate matter control methods and devices proposed within General Permit G20-C are in operation.

Does the registrant meet this rule? Yes No

What is PM limit for this source type? 50 lb/hr

45CSR10 (To Prevent and Control Air Pollution from the Emission of Sulfur Oxides)

45CSR10 establishes emission limitations for SO₂ emissions which are discharged from stacks of fuel burning units. A “fuel burning unit” means and includes 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.

Fuel burning units less than 10 MMBtu/hr are exempt. The sulfur dioxide emission standard set forth in 45CSR10 is generally less stringent than the potential emissions from a fuel burning unit for natural gas. The SO₂ emissions from a fuel burning unit will be listed in the G20-C permit registration at the discretion of the permit engineer on a case-by-case basis. Issues such as non-attainment designation, fuel use, and amount of sulfur dioxide emissions will be factors used in this determination.

Fuel burning units burning natural gas are exempt from Section 8 (Monitoring, Recording and Reporting) as well as interpretive rule 10A.

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
DBDM1	Hauck Starjet SJ-580 Combination oil/gas burner 2,800 Hours/Year	120

Does the registrant meet this rule? Yes No

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

45CSR13 applies to this source due to the fact that the applicant is defined as a “stationary source” under 45CSR13 Section 2.24.b. *Stationary source* means, for the purpose of this rule, any building, structure, facility, installation, or emission unit or combination thereof, excluding any emission unit which meets or falls below the criteria delineated in Table 45-13B which: (a) is subject to any substantive requirement of an emission control rule promulgated by the Secretary; (b) discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant; (c) discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis; (d) discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater; or, (e) an owner or operator voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so. 45CSR13 has an original effective date of June 1, 1974.

The applicant meets the definition of a stationary source because (check all that apply):

- Subject to a substantive requirement of an emission control rule promulgated by the Secretary.
- Discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant.
- Discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis.
- Discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater.
- Voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though

not otherwise required to do so.

General Permit G20-C Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G20-C sets forth reasonable conditions that enable eligible registrants to establish enforceable permit limits.

Section 5 of 45CSR13 provides the permit application and reporting requirements for construction of and modifications to stationary sources. No person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without notifying the Secretary of such intent and obtaining a permit to construct, modify, relocate and operate the stationary source as required in the rule or any other applicable rule promulgated by the Secretary.

If applicable, the applicant meets the following (check all that apply):

- Relocation
- Modification
- Class I Administrative Update (45CSR13 Section 4.2.a)
- Class II Administrative Update (45CSR13 Section 4.2.b)

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to all registrants that are subject to any of the NSPS requirements described in more detail in the Federal Regulations section. Applicable requirements of NSPS, Subparts I and OOO are included in General Permit G20-C.

The applicant is subject to:

- 40CFR60 Subpart I
- 40CFR60 Subpart OOO
- 40CFR60 Subpart IIII
- 40CFR60 Subpart JJJJ

45CSR30 (Requirements for Operating Permits)

45CSR30 applies to those sources for which 40CFR60 Subpart I and/or OOO applies. The affected registrants would be deferred Title V sources and would be subject to the fee schedule set forth in 45CSR30. The registrant is required to pay the appropriate annual operating fees and submit an annual Certified Emissions Statement.

40CFR60 Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants)

Subpart OOO sets forth opacity limits, particulate matter control methods, and monitoring requirements for all subject nonmetallic mineral processing plants.

The rule does not apply to the following operations:

1. Facilities located in underground mines.
2. Plants with no crusher or grinding mill above ground.
3. Wet material processing operations. Please see the rule text for the definition of a wet material processing operation.

4. Fixed crushing or sand and gravel plants with an initial crushing capacity of 25 tons per hour or less.
5. Portable crushing or sand and gravel plants with an initial crushing capacity of 150 tons per hour or less.
6. Common clay plants and pumice plants with an initial crushing capacity of 10 tons per hour or less.
7. An installation that is subject to 40 CFR Part 60, Subpart F or I.

Does the registrant meet this rule? Yes No, see #7 above.

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.

Does the registrant meet this rule? Yes No

40CFR60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)

Subpart IIII sets forth non-methane hydrocarbon (NMHC), hydrocarbon (HC), nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter (PM) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The provisions for stationary compression ignition (CI) internal combustion engines for owners or operators of this Subpart have been included in General Permit G20-C, Section 6.0. The following CI engines are subject to this section:

Emission Unit ID#	Engine Description (Make, Model)	Engine Size (HP)	Date of Manufacture	Provide Justification how 40CFR60 Subpart IIII is met.
				<input type="checkbox"/> Met Emission Standard <input type="checkbox"/> Certified Engine

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

Subpart JJJJ sets forth nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. The provisions for stationary spark ignition (SI) internal combustion engines for owners or operators of this Subpart have been included in General Permit G20-C, Section 6.0.

Emission Unit ID#	Engine Description (Make, Model)	Engine Size (HP)	Date of Manufacture	Provide Justification how 40CFR60 Subpart JJJJ is met.
				<input type="checkbox"/> Met Emission Standard

				<input type="checkbox"/> Certified Engine
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40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This Subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. This section reflects EPA’s final amendments to 40 CFR part 63, Subpart ZZZZ that were issued on January 15, 2013 and published in the Federal Register on January 30, 2013.

WVDEP DAQ has delegation of the area source air toxics provisions of this Subpart requiring Generally Achievable Control Technology (GACT). The provisions of this Subpart have been included in General Permit G20-C, Section 6.0.

Emission Unit ID#	Engine Description (Make, Model)	Engine Size (HP)	Date of Manufacture	New or Existing under 40CFR63 Subpart ZZZZ?	Provide Justification how 40CFR63 Subpart ZZZZ is met.

Are there any engines that fall in the window of being new under 40CFR60 Subpart ZZZZ but manufactured before the applicability date in 40CFR60 Subpart JJJJ? Yes No, not applicable

SOURCE AGGREGATION DETERMINATION
<p>“Building, structure, facility, or installation” is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.</p> <p>Is there equipment and activities located on contiguous or adjacent sites? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Is this equipment and/or activities under “common control”? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Do these facilities share the same two (2) digit SIC code? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Final Source Aggregation Decision. <input checked="" type="checkbox"/> Source not aggregated with any other source.</p> <p>Regarding the single source determination and siting information, the existing plant is on property leased from the Holcim-Mar, Inc. (Holcim) and is being removed because the property owner wants to quarry stone in that area. The new plant will also be located on property leased from Holcim. However, the two lease areas are not contiguous or adjacent, and W-L Construction has no control over Holcim property. The existing plant is located approximately 0.80 aerial mile from the new plant, and 0.67 mile over a public road (public road distance does not include nearly 0.5 mile of non-public (Holcim-controlled) haul road from the existing plant to the public road). The two properties will not be considered one site.</p> <p><input type="checkbox"/> Source aggregated with another source. List Company/Facility Name:</p>

RECOMMENDATION TO DIRECTOR

The information provided in the permit application, including all supplemental information received, indicates the applicant meets all the requirements of applicable regulations and the applicant has shown they meet the eligibility requirements of General Permit G20-C. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G20-C.

Permit Engineer Signature: _____
Name and Title: Thornton E. Martin Jr., Permit Engineer
Date: September 18, 2023