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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3203A
Plant ID No.:	051-00200
Applicant:	Unimin Corporation
Facility Name:	Benwood Terminal
Location:	Marshall County
NAICS Code:	488210
Application Type:	Modification
Received Date:	August 30, 2017
Engineer Assigned:	Steven R. Pursley, PE
Fee Amount:	$1,000.00
Date Received:	September 1, 2017
Complete Date:	September 28, 2017
Due Date:	December 27, 2017
Applicant Ad Date:	August 31, 2017
Newspaper:	*The Intelligencer*
UTM's:	Easting: 522.71 Northing: 4,427.45 Zone: 17
Description:	Modification to add two 5,000 ton capacity silos and ancillary equipment.

DESCRIPTION OF PROCESS

Raw materials arriving by railcar will consist of various grades of frac sand, and may include resin coated sand. These materials have already been washed, dried and screened prior to loadout, thereby removing much of the fines associated with unprocessed sand. Railcars holding approximately 100 tons per car will either be unloaded directly into covered transport trucks using a portable conveyor with dust collection, or into one of eight (six existing, two proposed in this application) silos for future loadout.

Rail unloading for the new silos will be similar to the existing six silos. Silo storage will consist of railcars emptying through an unloading hopper onto an 800 tph capacity below groung conveying system (BC-06). The below ground belt conveyor is controlled by a dust collector. Material is then transferred to an enclosed 800 TPH bucket elevator (BE-03).

At the top of the bucket elevator, material flows through an enclosed distributor that feeds one of the paired 5,000 ton silos directly (SI-07 or SI-08). Particulate Matter from Silo 07 and Silo 08 is emitted to the atmosphere via bin vent dust collectors. Each silo is equipped with a loadout spout directly beneath it for the loading of trucks.

Material is only transferred at this facility. There is no processing involved. Additionally, there are no outdoor material stockpiles.

SITE INSPECTION

Al Carducci of DAQs Northern Panhandle Regional Office performed a full on site inspection of the facility on January 08, 2016. The facility was determined to be in compliance. To get to the facility from Wheeling, take US Route 250 south (State Route 2) and exit onto Industrial Park Road (across from 5th Street in McMechen). Follow Industrial Park Road north approximately 0.5 miles to the facility.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Since no processing and no open storage of material occurs at the facility, the only emissions are Particulate Matter emissions resulting from transfer points and haul road emissions. Emission factors were taken from Table 11.19.2-2 of AP-42. Although chapter 11.19 of AP-42 is primarily for crushed stone, the narrative does discuss manufactured sand. Fabric filters (FF) were assigned a control efficiency of 99%.

The applicant did not include haul road emission calculations so they were performed by the writer using AP-42. Parameters used were based on the plot plan and the throughputs as outlined in the application. A control efficiency of 70% was used for the water truck which is required in the permit. Note that all emissions are based on the facility operating at full capacity 24 hours a day, 365 days per year.

Controlled emissions from the facility due to the modification should be as follows:

Table 1

	PM		PM_{10}	
	lb/hr	tpy	lb/hr	tpy
Transfer Points (w/ FF)	0.15	0.64	0.06	0.24
Haul roads	21.74	95.21	9.78	42.85
Total	**21.89**	**95.85**	**9.84**	**43.09**

The emissions estimate in Engineering Evaluation R13-3203 was erroneous as it apparently combined controlled and uncontrolled emissions. Additionally, it should be noted that emissions are identical to the previously permitted phase because there are half as many transfer points, each with twice the hourly capacity. Emissions from the existing facility are as follows:

Table 2

	PM		PM_{10}	
	lb/hr	tpy	lb/hr	tpy
Total	**21.89**	**95.85**	**9.84**	**43.09**

Therefore, emissions from the modified facility will be as follows:

Table 3

	PM		PM_{10}	
	lb/hr	tpy	lb/hr	tpy
Total	**43.78**	**191.7**	**19.68**	**86.18**

REGULATORY APPLICABILITY

The following state regulations apply to the facility (no federal rules i.e. NSPS, MACT/NESHAPs are applicable):

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).

The modification of the Benwood Terminal has the potential to emit a regulated pollutant in excess of six (6) lbs/hour and ten (10) TPY and, therefore, pursuant to §45-13-2.24, the facility is defined as a "stationary source" under 45CSR13. Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct." Therefore, Unimin is required to

obtain a permit under 45CSR13 for the modification and operation of the terminal.

As required under §45-13-8.3 ("Notice Level A"), Unimin placed a Class I legal advertisement in a "newspaper of general circulation in the area where the source is . . . located." The ad ran on August 31, 2017 in the *Intelligencer* and the affidavit of publication for this legal advertisement was submitted on September 12, 2017.

45CSR17 To Prevent and Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter.

The main requirement of 45CSR17 is the prohibition of fugitive particulate matter which causes or contributes to statutory air pollution. Unimin will comply with this requirement with the use of pneumatic transfer systems controlled by a baghouse and dust collectors. Additionally, a water truck will be maintained on site to control emissions from haul roads.

45CSR22 Air Quality Management Fee Program

The facility is not subject to any NSPS, MACT or NESHAP. Additionally, the facility is defined as a minor source under 45CSR30. It should be noted that, although the PM_{10} emission rate in Table 3 above appears to be close to major source thresholds, the vast majority of that PM_{10} comes from haul road emissions which are not counted toward Title V applicability. Therefore the facility is not subject to 45CSR30 and will pay its annual fees through the Rule 22 program.

Nonapplicability Determinations

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

Since this is not a manufacturing source (sand is simply unloaded, stored and shipped) it is not subject to 45CSR7.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

No non-criteria regulated pollutants are expected to be emitted from the facility.

AIR QUALITY IMPACT ANALYSIS

Because this is a minor modification to an existing minor source, no modeling was performed.

MONITORING OF OPERATIONS

No new monitoring requirements are deemed necessary. However, the new equipment will be subject to the existing monitoring requirements. Specifically, the permittee will monitor and record the following:

* Records of monthly EPA Method 22 opacity testing and any corrective actions taken.

* Monthly throughput of sand.

* Monthly inspection of all baghouse bags.

CHANGES TO PERMIT R13-3203

The following changes will be made to R13-3203:

* Table 1.0 was updated to add the new equipment

* The Compliance and Enforcement email address was added to 3.5.3

* 4.1.1 was updated to reflect the new equipment and remove the erroneous uncontrolled emissions that were included in the previous permit.

* 4.1.3 was updated to reflect the new, increased, capacity.

RECOMMENDATION TO DIRECTOR

Information supplied in the application indicates that compliance with all applicable regulations will be achieved. Therefore it is the recommendation of the writer that permit R13-3203A for the modification of a sand distribution terminal in Benwood, Marshall County, be granted to Unimin Corporation.

Steven R. Pursley, PE
Engineer

September 28, 2017