



west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3355T
Plant ID No.: 045-00018
Applicant: Highland Mining Company (Bandmill Coal Corporation)
Facility Name: Rum Creek Plant
Location: Ethel, Logan County
SIC Code: 1422 (Crushed and Broken Limestone)
Application Type: Temporary
Received Date: January 11, 2017
Engineer Assigned: Thornton E. Martin Jr.
Fee Amount: \$2,000
Date Received: February 07, 2017
Complete Date: February 10, 2017
Applicant Ad Date: January 27, 2017
Newspaper: *Logan Banner*
UTM's: Easting: 423.12602 km Northing: 4,192.98429 km Zone: 17
Description: Applicant proposes to temporarily relocate and operate a portable 400 TPH aggregate crusher/screening plant (Permitted under G40-C075-P1 / 777-00138) to be used for the upkeep and maintenance of the Rum Creek mine site. This unit will be returned to the Pax Surface Mine site after work is completed.

PROCESS DESCRIPTION

Rock from adjacent overburden areas will be transferred to BS-01(PW) by front end loader @ TP-01(UD-PW); go to belt conveyor BC-01(NC) @ TP-02(TC-PE); transfer to screen SS-01(PW) @ TP-03(TC-PW). The screen will discharge material by size to two separate stockpiles OS-01(SW-WS) and OS-02(SW-WS) via belt conveyors BC-02(NC) and BC-03(NC) @ TP-04(TC-FE) thru TP-08(TC-MDH). The screen will transfer to belt conveyor BC-04(NC) @ TP-10(TC-FE) and feed bin BS-02(PW) @ TP-11(TC-PW). From BS-02, material will transfer to BC-05(NC) @ TP-12(TC-PE) to the crusher CR-01(FE) @ TP-13(TC-FE). The material will be crushed and discharged to stockpiles OS-03(SW-WS), OS-04(SW-WS), OS-05(SW-WS) according to size via belt conveyors BC-06(NC), BC-07(NC) and BC-08(NC) @ TP-14(TC-FE) thru TP-21(LO-MDH). Material will be loaded to truck for distribution on mine site at TP-06(LO-MDH), TP-09(LO-MDH), TP-16(LO-MDH), TP-18(LO-MDH) and TP-22(LO-MDH).

Applicant agrees to install a portable water spray system to control fugitive emissions.

Promoting a healthy environment.

The portable crushing unit is a Powerscreen XR400S. This unit has a Scania DC09, diesel engine (275 HP/202 kW@ 1800 RPM), (E-1), manufacture date of 2011, to operate the systems for both movement around the site and aggregate processing. An existing 1,000 gallon diesel fuel tank (T1) with a throughput estimated at 8,000 gallons/yr. will be on site. The external power screen unit is a Chieftain 2100S and will operate from on-site utility power.

The facility shall be constructed and operated in accordance with the following equipment and control device information taken from registration application R13-3355T:

Equipment ID No.	Date of Manufacture	Description	Maximum Capacity		Control Equipment ¹
			TPH	TPY	
Portable Crushing and Power Screen Unit					
BS-01	2011	10 Ton Feed Bin - receives rock from the endloader and feeds onto belt conveyor BC-01	----	640,000	PW
BC-01	2011	Belt Conveyor receives rock from feed bin BS-01 and transfers to power screen SS-01	400	640,000	N
SS-01	2011	Double Deck Screen - receives rock from BC-01, sizes it and drops to BC-02, BC-03 or BC-04	400	640,000	PW
BC-02	2011	Belt Conveyor receives screened rock from SS-01 and transfers to open stockpile OS-01	400	640,000	N
OS-01	2017	5,000 ton Open Stockpile - receives 1" sized rock from BC-02 and a front end loader transfers to trucks	----	640,000	SW-WS
BC-03	2011	Belt Conveyor receives screened rock from SS-01 and transfers to open stockpile OS-02	400	640,000	N
OS-02	2017	5,000 ton Open Stockpile - receives 2" sized rock from BC-03 and a front end loader transfers to trucks	----	640,000	SW-WS
BC-04	2011	Belt Conveyor receives oversized rock from SS-01 and transfers to feed bin BS-02	400	640,000	N
BS-02	2011	10 Ton Feed Bin - receives rock from belt conveyor BC-04 and feeds onto belt conveyor BC-05	400	640,000	PW
BC-05	2011	Belt Conveyor receives screened rock from BC-04 and transfers to crusher CR-01	400	640,000	N
CR-01	2011	Double Roll Crusher - receives rock from BC-05, crushing and transfers to conveyors BC-06, BC-07 or BC-08 based on size	400	640,000	PW
BC-06	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-03	400	640,000	N
OS-03	2017	5,000 ton Open Stockpile - receives 1" sized rock from BC-06 and a front end loader transfers to trucks	----	640,000	SW-WS
BC-07	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-04	400	640,000	N
OS-04	2017	5,000 ton Open Stockpile - receives 2" sized rock from BC-07 and a front end loader transfers to trucks	----	640,000	SW-WS
BC-08	2011	Belt Conveyor receives sized rock from CR-01 and transfers to open stockpile OS-05	400	640,000	N
OS-05	2017	5,000 ton Open Stockpile - receives 3" sized rock from BC-08 and a front end loader transfers to trucks	----	640,000	SW-WS
Engine			Operating Parameters		
E-1	2011	Scania DC09, 275 hp/202 kW, Tier 4i Cert.	13.9 GPH	1600 hrs/yr	SCR
Storage			Annual Throughput		
T1	N/A	1,000 Gallon Diesel Fuel Tank	8,000 gal/yr		N

¹ PW - Partial Enclosure w/Water Spray; SW-WS - Water Spray; N - No Controls; SCR - Selective Catalytic Reduction; N/A - Not Available

DESCRIPTION OF FUGITIVE EMISSIONS

The potential sources of fugitive emissions for this facility include emissions, which are not captured by pollution control equipment and emissions from open stockpiles and vehicular traffic on approximately 1 mile of unpaved haulroads and work areas. The haulroads and work areas will be controlled by water truck. The water truck will be operated three times daily and more as needed in dry periods.

An additive to prevent freezing will be utilized in the winter months when freezing conditions are present. New course gravel base material will be added to unpaved haulroads as needed.

SITE INSPECTION

This source will be relocated on site at the Rum Creek Plant to process aggregate for the upkeep and maintenance of the mine site. The writer deemed that a site inspection was not necessary at this time due to the type and scope of the relocation proposed.

Directions: From Logan, proceed toward Blair on Route 17 through Ethel and at the foot of Blair Mountain, the guard shack is on the right just off the main road. Guard will provide directions to the surface mine.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Fugitive emission calculations for continuous and batch drop operations, transfer points, crushing and screening, storage piles, and paved and unpaved haul roads are based on AP-42 "Compilation of Air Pollution Emission Factors." Control efficiencies were applied based on the Reference Document for General Permit G40-C. The estimated emission calculations were performed by the applicant using the General Permit G40-C Excel emission calculation spreadsheet and were checked for accuracy and completeness by the writer.

The engine emissions were found to be overstated, however, as the calculations were based on AP-42 emission factors instead of Manufacturers Data or EPA's Certificate of Conformity.

A Certificate of Conformity exists for the 2011 Scania Y9X (Certificate Number Y9XL12.7CAA) as provided in the Application.

The proposed relocation and configuration will result in the estimated potential to discharge controlled emissions (not including fugitive emissions) of 2.62 pounds per hour and 2.10 TPY of PM (particulate matter), of which 1.25 pounds per hour and 1.00 TPY are PM₁₀ (particulate matter less than 10 microns in diameter).

As mentioned in the previous paragraph, the engine emissions were overstated using AP-42 emissions factors. Estimated emissions based on the Tier 4i certification data for the Scania engine operating for 1,600 hours are 0.36 TPY of CO (Carbon Monoxide), 0.58 TPY of NO_x (Nitrogen Oxides), 0.54 TPY of VOC (Volatile Organic Compounds), 0.45 TPY of SO₂ (Sulfur Dioxide) and 0.01 TPY of PM₁₀. Refer to the following tables for a complete summary of the proposed facility's emissions:

Refer to the following tables for a complete summary of the proposed facility's emissions:

Table 1: Emissions Summary (*less Engine*)

<i>Emissions Summary - Highland Mining Company Portable Crusher and Screening Plant R13-3355T</i>	Controlled PM Emissions		Controlled PM ₁₀ Emissions	
	lb/hr	TPY	lb/hr	TPY
Fugitive Emissions				
Stockpile Emissions	0.14	0.62	0.07	0.29
Unpaved Haulroad Emissions	69.01	55.21	14.52	11.61
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	<i>69.15</i>	<i>55.83</i>	<i>14.58</i>	<i>11.91</i>
Point Source Emissions				
Equipment Emissions	2.58	2.06	1.23	0.99
Transfer Point Emissions	0.04	0.04	0.02	0.02
Point Source Emissions Total	<i>2.62</i>	<i>2.10</i>	<i>1.25</i>	<i>1.00</i>
FACILITY EMISSIONS TOTAL				
	71.77	57.93	15.83	12.90

Table 1a: Engine Emissions (Tier 4i)

Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tons/yr)
E-1	Carbon Monoxide	0.45	0.36
	Nitrogen Oxides	0.72	0.58
	Volatile Organic Compounds	0.68	0.54
	Sulfur Dioxide	0.56	0.45
	PM ₁₀	0.01	0.01
	Formaldehyde	0.0025	0.0019

REGULATORY APPLICABILITY

The proposed relocation of an aggregate processing facility is subject to the following state and federal rules:

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

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should 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 and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application R13-3355T are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 800,000 lb/hour, the maximum allowable emission rate is 50 lb/hour of particulate matter. The maximum emission rate is 2.62 lb/hour of particulate matter according to estimated emissions in fact sheet R13-3355T.

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 proposed temporary relocation for the portable aggregate processing plant is subject to the requirements of 45CSR13, Subsection 11. The applicant has submitted the proper application fee of \$1,500 and published a Class I legal advertisement in the *Logan Banner* on January 27, 2017.

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed relocation is subject to 40 CFR 60 Subpart OOO because it will occur after April 22, 2008 and the portable plant processes more than 150 tons of aggregate per hour. The proposed relocation will include two (2) feed bin, one (1) crusher, (1) screen and eight (8) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart OOO. Therefore, the proposed relocation is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. The facility should 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 proposed within application R13-3355T are in operation.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the aggregate processing plant will be a non-major source which is subject to NSPS Subpart OOO. The facility's potential to emit will be 1.01 TPY of a regulated air pollutant (PM₁₀), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY. Therefore, the facility will be subject to 45CSR30 and classified as a Title V deferred non-major source.

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

Highland Mining Company is subject to this subpart because the engine was manufactured after April 1, 2006. The portable unit utilizes a Scania DC09, diesel engine (275 HP/202 kW@ 1800 RPM, Mfg. Date: 2011), (Equipment ID No. : E-1), to operate the systems for both movement around the site and aggregate processing. The engine emissions for (E-1) is designated as EPA Tier 4i certified (Certificate Number Y9XL12.7CAA).

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

Highland Mining Company is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for

Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because E-1 is considered a new area source of HAPs since the facility was constructed on or after June 12, 2006, however, the only requirements that apply are those required under 45CFR60 Subpart IIII.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Various VOC/non-criteria regulated pollutants are emitted from the incomplete combustion of diesel fuel. These emissions, however, are generally small and do not adversely impact the quality of the surrounding ambient air.

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 will be located in Logan County, WV, which is currently designated as attainment for PM_{2.5} (particulate matter less than 2.5 microns in diameter).

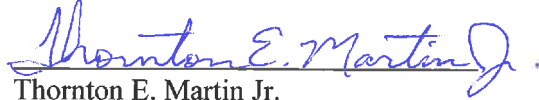
MONITORING OF OPERATIONS

Registrants will be required to perform the following monitoring and recordkeeping:

1. Monitor and record daily and monthly records of the amount of nonmetallic minerals processed.
2. Monitor and record calendar monthly and calendar annual quantity of fuel consumed and hours of operation for all engines and combustion sources.
3. Monitor and record calendar annual quantity of organic liquid throughput in all registered storage tanks.
4. Conduct visual observations of all points listed in the registration that are subject to opacity limits.
5. Conduct annual preventative maintenance/inspection, and all routine maintenance service and repairs as required, to facilitate proper control device performance, for the control devices listed in the registration.
6. Perform any applicable required monitoring, recordkeeping, reporting and testing that is required under 40CFR60 Subparts OOO and IIII.
7. These records shall be maintained on-site for a minimum of five (5) years from the date of record creation and shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in this relocation application indicates that compliance with all applicable regulations should be achieved when all 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. No comments were received. Therefore, the granting of a Temporary Permit to relocate to Highland Mining Company for the operation of a portable aggregate processing plant to be located near Ethel, Logan County, WV is hereby recommended.



Thornton E. Martin Jr.
Permit Engineer

February 09, 2017 _____

Date