west virginia department of environmental protection

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# ENGINEERING EVALUATION / FACT SHEET

## BACKGROUND INFORMATION

| | |
|---|---|
| Application No.: | G40-C077 |
| Plant ID No.: | 041-00078 |
| Applicant: | Doss Enterprises "LC" |
| Facility Name: | Doss Yard #3 |
| Location: | Lewis County |
| SIC Code: | 1422 (Crushed and Broken Limestone) |
| Application Type: | Construction |
| Received Date: | January 19, 2016 |
| Engineer Assigned: | Thornton E. Martin Jr. |
| Fee Amount: | $500 |
| Date Received: | January 20, 2016 |
| Complete Date: | February 26, 2016 |
| Applicant Ad Date: | January 27, 2016 |
| Newspaper: | *The Weston Democrat* |
| UTM's: | Easting: 551.3925 km Northing: 4,328.4525 km Zone: 17 |
| Description: | Construction and operation of a portable 350 TPH aggregate crushing and screening system to be used for property development. |

## PROCESS DESCRIPTION

Rock is transported by loader from adjacent areas and dumped into a stockpile OS1 (SW-WS) @ TP1 (UL-MDH), then transferred to the crusher hopper BS1 @ TP2 (UD-PE). Material from the hopper feeds to a 350 TPH crusher 1S (PE) @ TP3 (TC-PE) and then to the screen 2S (PE) @ TP4 (TC-PE). Screened material is sent to stockpiles OS2 (SW-WS) and OS3 (SW-WS) for truck delivery via two belt conveyors BC1 (N) and BC2 (N) at transfer points TP6 (UL-MDH) and TP12 (UL-MDH). Oversize material (3"+) discharges to ground (stockpile OS4).

The portable unit to be utilized is an Astec GT125 Track Mounted Jaw Crusher. The unit has a Caterpillar C7.1 ACERT, diesel engine (225 HP/168 kW@ 1800 RPM), (CE1), manufacture date of 2015, to operate the systems for both movement around the site and aggregate processing. The engine for this unit is EPA certified, Certificate of Conformity Number: FCPXL7.01HPF-022.

The facility shall be constructed and operated in accordance with the following equipment and control device information taken from registration application G40-C077:

| Equipment ID No. | Date of Manufacture | Description | Maximum Capacity | | Control Equipment [1] |
|---|---|---|---|---|---|
| | | | TPH | TPY | |
| **Portable Crush and Screen Unit** | | | | | |
| BS1 | 2016 | 100 Ton Feed Bin - receives rock from the endloader and feed into the crusher CR-01 | ---- | 140,000 | PE |
| 1S | 2016 | Jaw Crusher - receives rock from BS1, crushing and transfers to screen 2S | 400 | 140,000 | PE |
| 2S | 2016 | Double Deck Screen - receives crushed rock from 1S, sizes it and drops to BC1 or BC2 | 400 | 140,000 | PE |
| BC1 | 2016 | Main Product Conveyor - transfers sized rock from 2S to OS2 | 300 | 97,500 | N |
| BC2 | 2016 | Side Conveyor - transfers sized rock from 2S to OS3 | 200 | 65,250 | N |
| **Engine** | | | **Operating Parameters** | | |
| CE1 | 2015 | Caterpillar C7.1 ACERT, 225 hp/168 kW, EPA Cert. | 11.12 GPH | 8760 hrs/yr | N |
| **Storage** | | | **Annual Throughput** | | |
| OS1 | 2016 | 1,600 sq.ft. Open Stockpile - receives rip-rap from trucks, endloader will transfer the rock from the stockpile to the portable system feed bin BS1 | 140,000 TPY | | SW-WS |
| OS2 | 2016 | 1,600 sq.ft. Open Stockpile - receives sized rock from BC1 and a front end loader transfers to trucks | 70,000 TPY | | SW-WS |
| OS3 | 2016 | 1,600 sq.ft. Open Stockpile - receives sized rock from BC2 and a front end loader transfers to trucks | 40,000 TPY | | SW-WS |
| OS4 | 2016 | 1,600 sq.ft. Open Stockpile - receives oversize material discharged from unit | 30,000 TPY | | SW-WS |

[1] PE - Partial Enclosure; SW-WS - Water Spray; N - No Controls

## 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 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 located on site at the Doss Yard #3 to process aggregate for theproperty development. The writer deemed that a site inspection was not necessary at this time due to the type and scope of the construction proposed.

Directions: From the intersection of SR19 and CR7, travel South on SR19 for 1,400 ft. to Doss Enterprises Yard #3. Coordinates for the site are 39.10370N and -80.40563W.

## 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 proposed construction will result in the estimated potential to discharge controlled emissions of approximately 12 TPY of PM (particulate matter), of which 4.39 TPY are $PM_{10}$ (particulate matter less than 10 microns in diameter). Refer to the following table for a complete summary of the proposed facility's emissions:

Table 1: Emissions Summary

| ***Emissions Summary -*** *Doss Enterprises "LC" Portable Crush and Screen System* ***G40-C077*** | Controlled PM Emissions | | Controlled $PM_{10}$ Emissions | |
|---|---|---|---|---|
| | lb/hr | TPY | lb/hr | TPY |
| **Fugitive Emissions** | | | | |
| Stockpile Emissions | 0.02 | 0.07 | 0.01 | 0.03 |
| Unpaved Haulroad Emissions | 23.44 | 4.69 | 6.92 | 1.38 |
| Paved Haulroad Emissions | 0.00 | 0.00 | 0.00 | 0.00 |
| **Fugitive Emissions Total** | *23.46* | *4.76* | *6.93* | *1.42* |
| **Point Source Emissions** | | | | |
| Equipment Emissions | 16.33 | 3.27 | 5.79 | 1.16 |
| Transfer Point Emissions | 19.16 | 3.83 | 9.06 | 1.81 |
| **Point Source Emissions Total** | *35.49* | *7.10* | *14.85* | *2.97* |
| | | | | |
| **FACILITY EMISSIONS TOTAL** | **58.95** | **11.86** | **21.78** | **4.39** |

Table 1a: Engine Emissions

| Source | Pollutant | Maximum Hourly Emissions (lb/hr) | Maximum Annual Emissions (tons/yr) |
|---|---|---|---|
| CE1 | Carbon Monoxide | 0.075 | 0.33 |
| | Nitrogen Oxides | 0.56 | 2.453 |
| | Sulfur Dioxide | 0.48 | 2.10 |
| | $PM_{10}$ | 0.5 | 2.20 |
| | Volatile Organic Compounds | 0.011 | 0.05 |
| | Formaldehyde | 0.11 | 0.48 |

## REGULATORY APPLICABILITY

The proposed construction 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 G40-C077 are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 700,000 lb/hour, the maximum allowable emission rate is 50 lb/hour of particulate matter. The maximum emission rate is 35.49 lb/hour of particulate matter according to estimated emissions in fact sheet G40-C077.

*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 construction for the portable aggregate processing is subject to the requirements of 45CSR13, Subsection 11. The applicant has submitted the proper application fee of $500 and published a Class I legal advertisement in *The Weston Democrat* on January 27, 2016.

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

The proposed construction 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 construction will include one (1) feed bin, one (1) crusher, (1) screen and two (2) belt conveyors, which are defined as affected facilities in 40 CFR 60 Subpart OOO. Therefore, the proposed construction 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 G40-C077 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 2.97 TPY of a regulated air pollutant ($PM_{10}$), 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*

Doss Enterprises "LC" is subject to this subpart because the engine was manufactured after April 1, 2006. The portable unit utilizes a Caterpillar C7.1 ACERT, diesel engine (225 HP/168 kW@ 1800 RPM, Mfg. Date: 2015), (Equipment ID No. : CE1), to operate the systems for both movement around the site and aggregate processing. The engine emissions for (CE1) is EPA certified.

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

Doss Enterprises "LC" is subject to 40CFR63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, because CE1 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.

The proposed construction of Doss Enterprises "LC" 's portable 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 aggregate processing facility is not listed in Table 1. The facility will have a potential to emit 7.10 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

A toxicity analysis was not performed because the pollutants being emitted from this facility are primarily PM (particulate matter) and $PM_{10}$ (particulate matter less than 10 microns in diameter).

## AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located Lewis County, WV, which are currently in attainment for PM (particulate matter), $PM_{10}$ (particulate matter less than 10 microns in diameter) and $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

## GENERAL PERMIT ELIGIBILITY

The proposed modification of this facility meets the applicability criteria (Section 2.3), siting criteria (Section 3.1) and limitations and standards (Section 5.1) as specified in General Permit G40-C.

## MONITORING OF OPERATIONS

G40-C 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 are applicable required monitoring, recordkeeping, reporting and testing that is required under 40CFR60 Subparts OOO, IIII, and JJJJ.
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 construction 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 General Permit to Construct to Doss Enterprises "LC" for the operation of their portable aggregate processing plant to be located near Jane Lew, Lewis County, WV is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

February 26, 2016
Date