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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G40-C073
Plant ID No.:	017-00159
Applicant:	Kanawha Stone Company (KSC)
Facility Name:	Sandstrom Treatment Facility
Location:	Greenwood, Doddridge County
NAICS Code:	23799
Application Type:	Construction
Received Date:	September 24, 2015
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	$1,500.00
Date Received:	September 29, 2015
Complete Date:	November 13, 2015
Due Date:	December 28, 2015
Applicant Ad Date:	October 27, 2015
Newspaper:	*The Herald Record*
UTM's:	Easting: 509.2 km Northing: 4,346.7 km Zone: 17
Latitude/Longitude:	40.119060 / -80.597750
Description:	This permitting action is for a non-metallic minerals processing facility.

DESCRIPTION OF PROCESS

The following process description was taken from Registration Application G40-C073:

Two (2) crushers will be used for this project. Shot rock is pushed to the shot rock pile. An excavator transfers the shot rock to the jaw crushers. The crushed rock is dumped from the crusher to the crushed product stockpile. The crushed product is taken from the stockpile by an excavator and transferred to trucks for transportation to the final use site.

Fugitive emissions exist from unpaved haul roads and stockpiles. A water truck will be utilized to pump and spray water on haul roads and stockpiles. Water will be utilized for dust control. The water truck will be kept in a warm area when not in use. The haul roads and stockpiles will be sprayed on an as-needed basis to minimize dust. There are not any plans for the utilization of chemical suppressants. The haul road is coarse stone.

A water spray system will be installed at all transfer points and conveyors to minimize dust.

SITE INSPECTION

A site inspection was conducted on August 26, 2015 by the writer, Dennis Stottlemyer (DEP Environmental Advocate Office), Jeremy Bandy (DEP Environmental Enforcement (EE)), Larry Board (DEP DWWM), Jon Bosley (DWWM), Jason Ely (DEP EE), and James Tallman (DEP EE). The closest residence is approximately 900 feet from the proposed facility. No construction had occurred. The G40-C siting criteria were met.

Latitude: 39.26982
Longitude: -80.89233

Directions to the facility are as follows:

From Greenwood: Facility located off of US-50 on access road off of Gum Run Road (50/36)

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this construction application consist of the emissions from two (2) natural gas fired engines, two (2) jaw crushers, two (2) stockpiles, six (6) transfer points, and unpaved haulroad emissions. KSC utilized the G40-C DAQ MS Excel spreadsheet for the particulate matter emissions and the engines are USEPA certified.

The total facility PTE for the Sandstrom rock crushing operation is shown in the following table:

Pollutant	Maximum Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	0.90
Carbon Monoxide	0.78
Volatile Organic Compounds	0.02
Particulate Matter-10	61.71
Sulfur Dioxide	0.82
Total HAPs	<0.01

Maximum detailed controlled point source emissions were calculated by KSC and checked for accuracy by the writer and are summarized in the table on the next page.

Kanawha Stone Company – Sandstrom Treatment Facility (G40-C073)

Emission Point ID#	Source	NO_x		CO		VOC		PM-10		SO_2		Formaldehyde		Total HAPs	
		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year
CE-1*	Diesel Engine	0.63	0.45	0.54	0.39	0.01	0.01	0.01	0.01	0.56	0.41	<0.01	<0.01	<0.01	<0.01
CE-2*	Diesel Engine	0.63	0.45	0.54	0.39	0.01	0.01	0.01	0.01	0.56	0.41	<0.01	<0.01	<0.01	<0.01
CR	Crusher Equipment Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.92	0.00	0.00	0.00	0.00	0.00	0.00
TP	Transfer Point Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.50	0.00	0.00	0.00	0.00	0.00	0.00
Total Point Source		**1.26**	**0.90**	**1.08**	**0.78**	**0.02**	**0.02**	**0.34**	**1.44**	**1.13**	**0.82**	**0.00**	**0.00**	**<0.01**	**<0.01**
SP	Stockpile Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.86	3.75	0.00	0.00	0.00	0.00	0.00	0.00
HR	Haulroad Emissions	0.00	0.00	0.00	0.00	0.00	0.00	78.50	56.52	0.00	0.00	0.00	0.00	0.00	0.00
Total Fugitive		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**79.36**	**60.27**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total Sitewide		**1.26**	**0.90**	**1.08**	**0.78**	**0.02**	**0.02**	**79.70**	**61.71**	**1.13**	**0.82**	**0.00**	**0.00**	**<0.01**	**<0.01**

* Temporary operation that will operate 1,440 hours

REGULATORY APPLICABILITY

The following rules apply to the facility:

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-C073 are in operation.

According to Table 45-7A, 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 2.90 lb/hour of particulate matter according to calculated emissions in fact sheet G40-C073.

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 KSC is defined as a "stationary source" under 45CSR13 Section 2.24.b, which states that an owner or operator 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. KSC has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fee (construction).

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

45CSR16 applies to this source by reference of 40CFR60, Subparts OOO and IIII. These requirements are discussed under those rules below.

45CSR30 (Requirements for Operating Permits)

In accordance with 45CSR30 Major Source Determination, this facility will be a non-major source which is subject to NSPS Subpart OOO. The facility's potential to emit will be 1.42 TPY of a regulated air pollutant (PM_{10}), not including fugitive emissions from haul roads, 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.

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 plant processes more than 25 tons of rock per hour. The proposed construction will include two (2) jaw crushers and two (2) stockpiles, 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-C073 are in operation.

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

Subpart IIII sets forth non-methane hydrocarbon (NMHC), hydrocarbon (HC), nitrogen oxides (NO_x), 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 275HP diesel fired ICEs (CE-1, CE-2) are subject to this subpart. These units are required to meet the Tier 2 standards of 4.0 g/kw-hr for NMHC+NO_x, 3.5 g/kw-hr for CO and 0.20 g/kW-hr for PM. KSC states these units are EPA certified engines. KSC will be required to possess an EPA Certificate of Conformity for these engines prior to operation, or the engines will be subject to performance testing.

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines)

Subpart ZZZZ establishes national emission limitations and operating limitations for HAPs emitted from stationary 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. The engines at this facility are subject to the area source requirements for non-emergency compression ignition engines.

The applicability requirements for new stationary RICEs located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart IIII. These requirements were outlined above. The proposed engines meet these standards.

The following rules do not apply to the facility:

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

The Sandstrom Facility is located in Doddridge County, which is an unclassified county for all criteria pollutants, therefore it is not applicable to 45CSR19.

As shown in the following table, KSC is not a major source subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE on the following page.

Pollutant	**PSD (45CSR14) Threshold (tpy)**	**NANSR (45CSR19) Threshold (tpy)**	**Sandstrom PTE (tpy)**	**45CSR14 or 45CSR19 Review Required?**
Carbon Monoxide	250	NA	0.78	No
Nitrogen Oxides	250	100	0.90	No
Sulfur Dioxide	250	100	0.82	No
Particulate Matter 2.5	250	100	1.44	No
Ozone (VOC)	250	NA	0.02	No

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

The proposed permitting action accounts for less than 0.01 tons per year of hazardous air pollutants.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed in the Regulatory Discussion Section.

SOURCE AGGREGATION

The emissions associated with the temporary operation of this facility are secondary emissions as defined in 45CSR13 Section 2.23.

> *"Secondary emissions" means emissions which would occur as a result of the construction or operation of a stationary source or modification, but do not come from the stationary source or modification itself. For the purpose of this rule, secondary emissions must be specific, well defined, quantifiable, and impact the same general area as the stationary source or modification which causes the secondary emissions. Secondary emissions include, but are not limited to, emissions from any off-site support facility which would not otherwise be constructed or increase its emissions except as a result of the construction or operation of the stationary source or modification.*

45CSR13 Section 2.19 defines "Potential to Emit" which states that "secondary emissions" shall not be included in any determination of a stationary sources potential to emit. Therefore, these emissions are temporary and not additive in making a source determination.

MONITORING OF OPERATIONS

KSC will be required to perform the following monitoring and recordkeeping associated with this permit application:

- Monitor and record quantity of raw material throughput.
- Monitor and minimize fugitive emissions.
- Monitor all applicable requirements of 40CFR60 Subparts IIII and OOO.
- Monitor and record the operating hours of the engines.
- The records shall be maintained on site or in a readily available off-site location maintained by KSC for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates KSC's Sandstrom Treatment Facility meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Doddridge County location should be granted registration under General Permit G40-C.

Jerry Williams, P.E.
Engineer

Dec 1, 2015
Date