

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P062263482

FACILITY: STATELINE CRUSHING	SRN / ID: P0622
LOCATION: 7061 Dexter Ann Arbor Rd, DEXTER	DISTRICT: Jackson
CITY: DEXTER	COUNTY: WASHTENAW
CONTACT: John Thompson , Owner Operator	ACTIVITY DATE: 07/06/2022
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance
SUBJECT: Unannounced, self-initiated inspection.	SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:	

Staff, April Lazzaro arrived at the facility to conduct an unannounced, self-initiated inspection. Upon arrival to the site, I observed opacity in the 10-20% range at the crusher. At the time of the inspection, the crusher was located at the Michigan Paving and Materials - Woodland (MI Paving) located at 3566 Millcreek Ave, Comstock Park, MI. I contacted MI Paving to request access and an escort to the crusher, and one was provided. Once on site, my escort and I learned that the only staff at the crusher who could assist me was driving the loader and as such the plant was shut down in order for me to conduct an inspection. I was met by Luke Howe, operator for Stateline Crushing who provided me with information during the inspection.

FACILITY DESCRIPTION

This crushing plant was manufactured by KPI-JCI and the following equipment manufactured in 2015 was observed:

4250 Jaw Crusher, 500 tons per hour max rating- serial number 414882,

Device ID, 15-1001

Screen- serial number 5153542, Device ID, 15-1002

70' x ?" return conveyor, Device ID, 15-1003

(2) 30' x ?" conveyors, Device ID unknown

170' x ?" stacker conveyor, Device ID, 15-1004

Diesel fired Volvo engine/generator set, 796 hp at 1,800 rpm, Device ID, 15-1011

COMPLIANCE EVALUATION

At the time of my inspection, no water was being used on the crushing plant. The crushing plant was not equipped with appropriate spray nozzles, no hoses were attached, and the water truck which was parked a few hundred feet away from the crushing plant was empty. As indicated, opacity was in the 10-20% range, however due to the short duration of observed operation, a 6-minute average of opacity readings were not obtained.

The KPI-JCI crusher is rated at 500 tons per hour, and is therefore subject to 40 CFR Part 60, Subpart OOO- Standards of Performance for Nonmetallic Mineral Processing Plants.

This facility has historically operated under the Rule 290 exemption, and records were requested and received. A review of the Rule 290 exemption demonstration found that it is not acceptable, and this crusher is not eligible to utilize a permit exemption. The emission factors (EF) used in the Rule 290 demonstration are from AP-42 (<https://www3.epa.gov/ttnchie1/ap42/ch11/final/c11s1902.pdf>) and are for tertiary crushing (with an E rating) and Stateline Crushing conducts primary crushing which has no AP-42 EF in that document. The emission factors used in the exemption demonstration do not align with the activity and are not acceptable for use. Furthermore, the exemption demonstration utilized the use of water as a form of particulate control, and no water was in use at the time of the inspection.

AQD staff considered that they chose the EF for tertiary crushing for the recycled asphalt paving (RAP) because some of the material is already reduced in size before they crush it. However, the AP-42 goes into detail how the crushing process works, and it specifies that tertiary crushing is to further reduce materials that come out of a secondary crusher at a size of 1-4". Photos of the stockpile they were pulling from to feed the crusher were taken, and while some of the material is certainly in the 1-4" size, there is also larger pieces of RAP which are a foot or more in diameter, and as such is not considered tertiary crushing. (see attached photo of stockpile)

The specific EF Stateline is using per the Rule 290 demonstration is 0.0012 lb PM/ton processed, which per the AP-42 is a controlled EF. In the Michigan Air Emissions Reporting System (MAERS) they then add 60% control factor for water (see attached MAERS supplement)- which is not appropriate as it is already a controlled EF. This is less important as the EF is invalid however it is noted that the MAERS reports are incorrect.

The accepted EF for crushing is 0.05 lb PM₁₀/ton processed with an 80% control factor. Using the data submitted to the MAERS system for the calendar year 2021, the following corrected emission rates were calculated.

Assuming water use 100% of the time:

$$464,040 \text{ tons processed} \times 0.05 \times 80\% = 4,640 \text{ lbs PM}_{10}$$

$$4,640 / (230 \text{ days}) \times 7.7 \text{ months} = 602 \text{ lbs/month}$$

Assuming water use 0% of the time (the condition the crusher was operating at the time of the inspection):

$$464,040 \text{ tons processed} \times 0.05 = 23,202 \text{ lbs PM}_{10}$$

$$23,202 / 7.7 \text{ months} = 3,013 \text{ lbs/month}$$

Based on the information identified above, Stateline Crushing is not eligible to utilize the Rule 290 exemption which limits controlled emissions of particulate matter to less than 500 lbs/month controlled or 1,000 lbs/month uncontrolled and is in violation of Rule 201 for failure to obtain a Permit to Install. A Violation Notice will be issued.

A 2015 meeting report found in the AQD database details that a conversation between the facility consultant and AQD was conducted, and it is specifically noted that the consultant was informed that "AQD does not conduct a full review and approval of exemptions. We did not conduct a detailed review and approval for this

submittal.” A full review has now been conducted, and the submittal has been determined to be unacceptable, and the crushing plant is not eligible to utilize an exemption.

Additionally, it is noted that in 2018, Stateline Crushing was cited in violation of Rule 201 for operating the crushing plant without water as required by Rule 290. This current inspection and the lack of water use is further evidence that Stateline Crushing has failed to maintain an exempt status.

While on-site, I spoke on the phone with the facility owner, John Thompson who went into detail about his operations. He indicated that he would have records emailed to me, and those were received by the facility consultant. (see attached) Mr. Thompson also stated that the plant would remain shut down until water use was implemented. It is noted that since the plant was not equipped with appropriate water spray devices, the operator went to the store to purchase the necessary items.

As indicated above, a review of the 2021 MAERS submittal was conducted to calculate the correct emissions for the facility. During that review, it was identified that the facility was not reporting emissions associated with the 796 hp Volvo diesel engine/generator set. Per AQD MAERS guidance, and assuming the facility is using the Rule 285(2)(g) exemption for internal combustion engines, emissions should be reported to MAERS because it is larger than 300 hp, and they have not been.

<https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/AQD/emissions/maers-user-guide.pdf?rev=3dfcc7b61174480eb81bda6da5b5d301> Table 9-1, page 32) While this engine is portable like the crusher itself, it is still considered a regulated stationary source (not a non-road/transportation engine) and the emissions are required to be reported annually.

I went back to observe crushing operations from 4:00-5:00 PM the same day, and found that the crusher was not operating, and it appeared as though it was still in the process of being equipped with water spray capabilities.

Since the home base for this facility is in the Jackson District, all communications have been shared with the Jackson District staff.

CONCLUSION

Stateline Crushing was in non-compliance at the time of the inspection.



Image 1(KPI JCI 4250) : 500 tph primary jaw crusher



Image 2(KPI JCI plant) : KPI JCI nonmetallic mineral crushing plant



Image 3(KPI JCI) : KPI JCI nonmetallic mineral crushing plant. Asphalt plant in background.



Image 4(KPI JCI) : KPI JCI screen with Volvo engine/gen set in background.



Image 5(Feed Pile) : KPI JCI nonmetallic mineral crusher recycled asphalt paving feed pile.

EMISSIONS FOR EUCrusher							EUCrusher
Stalene Crushing SRN P0622							
MAERS RY2021							
EULE Emission Unit Number:		EUCrusher		SZZ Code:		3-05-025-01	
Emission Unit Description:		RAP Crushing, Screening and Conveying Operations					
Emission Unit Stack ID Number(s):		NA					
TYPE OF EMISSION							
Fugitive Particulate Emissions							
Emission Calculations							
Total Throughput (tons/yr)	Activity	Control	PM Emission Factor (lb/ton)	Throughput Fraction	Activity Throughput (tons/yr)	Control Efficiency	Activity PM Emission Rates (lb/yr)
464,040	Front end loader to weigh hopper (material loading)	None	1.80E-05	100%	464,040	60%	3.0
	Crusher	Water Spray	0.0012	115%	533,646	60%	256.2
	Drop from Crusher to Conveyor	Water Spray	1.40E-04	115%	533,646	60%	29.9
	Drop from Conveyor to Screen	Water Spray	1.40E-04	115%	533,646	60%	29.9
	Screen	Water Spray	0.5023	115%	533,646	60%	459.8
	Drop from Screen to Screen Cross Conveyor (SCC)	Wet Material	1.40E-04	15%	69,806	60%	3.9
	Transfer from SCC to Return Conveyor (RC)	Wet Material	1.40E-04	15%	69,806	60%	3.9
	Drop from RC to Crusher Hopper	Wet Material	1.40E-04	15%	69,806	60%	3.9
	Drop from Screen to Screen Fines Conveyor (SFC)	Wet Material	1.40E-04	100%	464,040	60%	26.0
	Transfer from SFC to Field Conveyor 1 (FC1)	Wet Material	1.40E-04	100%	464,040	60%	26.0
	Transfer from FC1 to Field Conveyor 2 (FC2)	Wet Material	1.40E-04	100%	464,040	60%	26.0
	Transfer from FC2 to Radial Stocker	Wet Material	1.40E-04	100%	464,040	60%	26.0
	Stacker to RAP Storage Pile	Wet Material	1.40E-04	100%	464,040	60%	26.0
Crusher and Screen PM Emissions						990	lb/yr
Controlled Combined Operations Emission Factor						2.00E-03	lb/ton
Uncontrolled Combined Operations Emission Factor						5.01E-03	lb/ton
EMISSION ESTIMATION FACTORS & EQUATIONS							
Emission Factors for crushing, screening and conveying obtained from AP-42 Section 11.19 Table 11.19.2-2 (06/04)							
Emission Factor for front end loader drops is for PM10. No total PM Factor available for this activity.							
DATA SOURCES							
NOTES							
Crusher and screen control efficiency based on processing RAP coated with asphalt cement and inherently less dusty than virgin stone upon which the AP-42 factor is based.							
APPLICABLE RULES							

Image 6(2021 MAERS) : EUCRUSHER MAERS attachment.

NAME April Lazzaro DATE 07/13/2022 SUPERVISOR AH