

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

B196067815

FACILITY: Cadillac Asphalt LLC., Wixom		SRN / ID: B1960
LOCATION: 51777 W 12 MILE RD, WIXOM		DISTRICT: Warren
CITY: WIXOM		COUNTY: OAKLAND
CONTACT: Dave Gaedcke , Lead Plant Operator		ACTIVITY DATE: 06/15/2023
STAFF: Robert Joseph	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection of HMA plant		
RESOLVED COMPLAINTS:		

On June 15, 2023, I, Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division (EGLE - AQD) staff Robert Joseph, conducted a scheduled inspection of Cadillac Asphalt, LLC, (B1960) also referred to as “the facility” or the “plant” – located at 51777 West 12 Mile Rd. Wixom, MI 48393. The purpose of the inspection was to determine the facility’s compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division (EGLE - AQD) Administrative Rules, and conditions of the facility’s Permit to Install (PTI) 446-94F.

Opening Introduction

I arrived at the facility shortly before 1 p.m. and met with plant employees, Jacob, and Kenny. The facility’s previous site manager, Brad Hilliard, is no longer employed with the facility. The new plant manager, Dave Gaedcke, and lead plant operator, Steve Hall, were not on-site. I introduced myself and presented my identification and credentials and stated the purpose of my visit. I asked Jacob if there have been any operational changes at the facility and he stated there have not been any changes other than personnel. He indicated Cadillac Asphalt is owned by the Levy Company and they own several other plants in the Detroit Metro area. He indicated their hours of operation are typically 6 a.m. – 5 p.m. daily, with occasional Saturdays and Sundays as needed. There are approximately three employees that typically operate the facility’s processes (Jacob, Kenny, and Steve) and there are approximately over 70 transport trucks owned by the facility that haul the HMA material.

In March 2021, the facility installation of a 15,000 gallon asphalt cement tack storage tank. This is exempt per Rule 289(2)(b); a liquid asphalt storage tank that is controlled by an appropriately designed and operated vapor condensation and recovery system or an equivalent control system. The asphalt tack storage tank will be controlled by a vapor condensation and recovery system. The VOCs from the tank were determined to be under the significant levels of 40 tons/yr and the facility is not a major source of HAPs.

Facility Operations

The HMA is produced in a counter-flow rotary drum that is fueled by natural gas. The aggregate material and mix design are fueled through the usage of natural gas only. Once the appropriate aggregate is chosen for a specific mix design, the aggregate falls from its bin onto the main conveyor belt. It then moves up to the hopper and into the counter flow design where the exhaust gases of the drum pass through the dryer flame which combusts the fumes. These gases then exit the drum at the opposite end from the entrance of the

paving materials. The drum is designed for the aggregate to flow counter to the heat source, thus allowing for high aggregate temperatures and low stack temperatures (since the burner flame is not in contact with the asphalt).

The aggregate is conveyed to a weigh bridge before it is sent to the counter flow direct-fired rotary drum. The facility formulates over 180 mix designs and has approximately 20 aggregate types of sand and stone depending on the mix design. Aggregate materials such as 20AA, mansand buno, wyandotte sand and gap graded material serve as their virgin material. There are five liquid silo tanks which hold 35,000 gallons of liquid asphalt emulsion, and a Tack tank which is an adhesive-like compound that is applied onto the unpaved surface before the placement of hot-mix asphalt (HMA). The Tack is sprayed onto the ground surface before the placement of hot-mix asphalt (HMA) to aid in adhesion.

Once the HMA is produced, it is stored in 8 finished silo tanks with each holding roughly 2,000 tons. The HMA mix is maintained at 300 degrees °F for ease of placement and compaction in-place. Dust and particulates from the aggregate material are mixed back into the final product. Jet-pulse baghouses are used to control particulate emissions and there are approximately 862 baghouses used in each mix process. A stack with an exhaust dimension of 72 inches emits the emissions into the atmosphere and there were no visible emissions originating from the stack at the time of inspection.

PTI 476-94F

GENERAL CONDITIONS

There were no concerns regarding these conditions at the facility. No visible emissions were observed from the stack, no malfunctioning equipment, and no modifications of the facility's equipment was observed.

EU-HMAPLANT

I. EMISSION LIMITS

The following pollutants were tested at the facility in August 2012:

Pollutant	Test Result	Permit Limit
1. PM	0.011 gr/dscf	0.04 gr/dscf
2. PM	0.0045 lb/ton	0.032 lb/ton

Per Section VI. 6 Monitoring/Recordkeeping which states in part, "in the event that stack test results do not exist for a specific pollutant, the applicable emission factor listed in the Emission Limit Table shall be used to estimate the emissions of a pollutant from EU-HMAPLANT." No stack results exist for the remaining pollutants (CO, SO₂, and NO_x), however, the facility has maintained 12-month rolling totals for each per the monitoring/recordkeeping requirements.

II. MATERIAL LIMITS

The facility only burns natural gas and has not burned propane, fuel oil, or recycled used oil (RUO). In addition, they do not appear to burn blended oil, hazardous waste, asbestos tailings, or waste materials containing asbestos per 40 CFR Part 61, Subpart M. The facility also has not burned any fuels containing sulfur (RUO) since the approximately 2009.

The facility's monthly RAP averages typically between 25% - 35% (the maximum RAP allowed is 50% combined of recycled asphalt and shingles).

The permit limit is 895,000 tons of HMA paving materials in EU-HMAPLANT per a 12-month rolling time-period as determined at the end of each calendar month. The facility has been producing between 350,000 – 400,000 tons per 12-month rolling time-period.

The permit limit is 600 tons of HMA paving materials in EU-HMAPLANT per hour based on a daily average, which is determined by dividing the daily HMA production by the daily production hours. The facility has been producing approximately 300 – 400 tons per hour.

III. PROCESS/OPERATIONAL RESTRICTIONS

The fugitive dust plan (Appendix A) is being implemented and maintained by the facility for site maintenance, on-site roadways, on-site management of haul vehicles (loads covered), management of front-end loader operations, and fugitive emissions from process equipment. Records show routine applications occurring at least twice a month at minimum. The preventive maintenance program (Appendix B) is being implemented and maintained by the facility. The pressure drop across the fabric filter dust collector is recorded at least once per day and averages 3.0 inches H₂O during operations. The pressure drop gauge read 3.2 inches H₂O at the time inspection.

A black light test was performed before the start of the paving season (March 23, 2023) which revealed two seals that were repaired and retested. A review of facility records indicate documentation was noted for activities related to the baghouses and plant operations. The emission abatement plan (Appendix C) for startup, shutdown, and malfunctions is being implemented and maintained by the facility (normal startup and shutdown procedures are performed by the facility) which includes weigh scales that are calibrated and an alarm notification when the plant approaches the HMA production permit limit. Maintenance logs and procedures are documented for malfunctions and items of inspection. The facility has not used Recycled Used Oil regarding the compliance monitoring plan (Appendix D).

The efficiency of the drum mix burners is adjusted to ensure proper burner operation and to control CO emissions. Maintenance logs indicate efficiency checks for drum mix burners occur at the start of the paving season (April 18, 2023) and again at the end of each season (the tuning of the burners was not viewed at the time of inspection).

IV. DESIGN/EQUIPMENT PARAMETERS

The fabric filter dust collector is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the fabric filter dust collector requires a pressure drop

range between 2 and 8 inches of water column. Daily pressure is maintained at approximately 3.0 inches H₂O which was observed the day of inspection.

VI. MONITORING/RECORDKEEPING

Both the virgin aggregate feed rate and the RAP feed rate are monitored on a continuous basis via controls by the facility operator providing production totals every 15 minutes – which then generates a daily total. Based on the records review, it appears the facility is monitoring emissions data per the NSPS 40 CFR 60 Subparts A and I.

The facility has not burned recycled used oil and monitors the hot mix asphalt containing RAP (including the average percentage per ton produced). The average monthly RAP of HMA produced varies between 12,000 and 67,000 tons with the average percent of RAP/RAS per ton of HMA between 25% and 35%. The daily virgin aggregate feed rate is recorded every 15 minutes and the virgin HMA tons produced varying up to 106 tons per day to 3,400 tons used per day. The daily RAP/RAS feed rate varies between 50 – 150 tons per hour with a daily HMA product temperature of 300 °F. The facility maintains daily printouts of each mix design produced.

Stack test results have not been performed for the following criteria pollutants (CO, SO₂, and NO_x) except for PM. The monthly and 12-month rolling production totals for each are as follows:

PM: Monthly totals vary between 0.18 tons and 1.1 tons and 12-month rolling totals vary between 5 tons and 6 tons.

CO: Monthly totals vary between 1.2 tons and 6.8 tons and 12-month rolling totals vary between 35 tons and 42 tons.

NO_x: Monthly totals vary between 1.0 tons and 6.1 tons and 12-month rolling totals vary between 31 tons and 37 tons.

SO₂: Monthly totals vary between 0.98 tons and 5.7 tons and 12-month rolling totals vary between 29 tons and 35 tons.

The facility monitors CO emissions with readings occurring every 500 hours. The most recent monitoring event occurred on May 10, 2023, as follows (ppm): 89, 97, 100, 106, 99, 89, 93, and 91.

The facility's operating hours have varied up to 14 hours per this day this year and the average daily tons produced varies between 217 tons and 350 tons. Monthly and 12-month rolling production totals vary between 11,000 tons and 68,000 tons and between 350,000 and 410,000 tons, respectively.

VIII. STACK/VENT RESTRICTIONS

There were no visible emissions emanating from the facility's stack at the time of inspection.

EU-YARD

III. PROCESS/OPERATIONAL RESTRICTIONS

The fugitive dust control plan control in appendix B appears to be implemented and maintained as there were no fugitive emissions observed on site. The facility maintains records of monthly dust suppressant activities such as yard sweepings and waterings, the baghouse pressure is continuously monitored and recorded daily, a baghouse alarm notification occurs when the temperature reaches 300 °F, a black light inspection occurs before each paving season and during each baghouse inspection, an inventory of filter bags is monitored by the facility to ensure at least 15 filter bags are kept on site, and a baghouse inspection record is maintained on file.

VI. MONITORING/RECORDKEEPING

The facility reports their annual emissions of particulate matter for EU-YARD through MAERS. The facility used the U.S. EPA Air Pollutant Emission Factors (AP-42) in their latest MAERS 2023 submittal.

VII. REPORTING

The facility provided annual emissions from EU-YARD using an U.S. EPA emission factor of 2.2 lbs/mile with an 80% control efficiency resulting in 2,389 lbs of PM₁₀.

FG-FACILITY (EU-HMAPLANT, EU-YARD, EU-TANKS, EU-SILOS)

I. EMISSION LIMITS

Each individual HAP is to be less than 9.0 tons/yr for a 12-month rolling time-period as determined at the end of each calendar month. The HAP with the highest emission limit is Formaldehyde with a 12-month rolling total of 0.57.

Aggregate HAPs are to be less than 22.5 tons/yr for a 12-month rolling time-period as determined at the end of each calendar month. The current 12-month rolling aggregate HAP total is 0.77 tons.

VI. MONITORING/RECORDKEEPING

Individual and aggregate HAP emission calculations determining the monthly and 12-month rolling total emission rates are maintained and calculated by the facility (Lead, Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene, Formaldehyde, Acrolein, Arsenic, Nickel, Manganese, and Hydrogen Chloride).

Conclusion

Based on the AQD inspection and records review, it appears that Cadillac Asphalt is in compliance with the aforementioned requirements and conditions of the facility's Permit to Install (PTI) 446-94F.

NAME Robert Joseph

DATE 07-03 -23

SUPERVISOR Joyce