

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

N540368595

FACILITY: ACE-SAGINAW PAVING COMPANY		SRN / ID: N5403
LOCATION: 16255 TINDALL RD, DAVISBURG		DISTRICT: Warren
CITY: DAVISBURG		COUNTY: OAKLAND
CONTACT: Rick Will , AC Manager		ACTIVITY DATE: 07/26/2023
STAFF: Robert Joseph	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection of HMA plant.		
RESOLVED COMPLAINTS:		

On July 26, 2023, I, Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division staff, Robert Joseph, conducted a scheduled inspection of Ace – Saginaw Paving Company (N5403) (also referred to as “the facility” or “the plant” and formerly referred to as Ace Asphalt & Paving Company) located at 16255 Tindall Road, Davisburg, MI. 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; The Michigan Department of Environment, Great Lakes, and Energy – Air Quality Division (EGLE – AQD) Administrative Rules, and conditions of the facility’s Permit to Install, 194-85I.

General Facility Information

I arrived at the facility at approximately 1:30 p.m. and met with facility manager, Rick Will, and plant operator, Dave Clemens. I introduced myself and presented my identification and credentials and stated the purpose of my visit. I asked them if there have been equipment or personnel changes at the facility within the last 12 months. Rick indicated there have been no modifications to the facility’s equipment nor changes in personnel. The facility has continued to operate six days a week during the paving season (April to November) and sometimes on Sunday. The plant has been operating nights due to road construction projects in Lapeer County. The facility performs work primarily in Lapeer and Genesee County, as well as sometimes in Oakland County on occasion for local, county, state, and commercial projects. The facility currently employs three staff members on site to oversee the facility’s daily operations.

Facility Tour

The facility’s HMA is produced in a double counter-flow direct fired rotary in which the gases exit the drum at the opposite end from the entrance of the paving materials. The facility has used natural gas over the last 12 months and has not used RUO in their operations. 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 facility maintains two RAP bins (recycled asphalt pavement) and 12 virgin aggregate bins. The HMA product can be altered by changing the virgin aggregate and RAP mixture at the beginning of the process to produce many mix designs. Mix designs include the common 5E-3 (mainline roadway) and 4E-3 (road shoulders) for roadway construction.

The mix design process begins once the desired aggregate mix is loaded into the feed hoppers. The aggregate falls from its bin onto the main conveyor belt and the HMA production process begins. There is a single main belt for each of the virgin and RAP materials. The aggregate is conveyed to a weigh bridge and then flows into one drum which heats the virgin material removing its moisture – followed by the second drum (which is a

counter flow direct-fired rotary drum) used for the RAP and the mixing of liquid asphalt cement.

The facility's mix process includes eight emulsified liquid asphalt storage tanks (EU-ACTANKS), seven vertical and one horizontal. The tanks are exempt from Rule 201 (Permit to Install) per rule 289(2)(b) since the tanks are controlled by an appropriately designed and operated vapor condensation and recovery system. Each of the liquid asphalt tanks is equipped with a canister style condensation and recovery system. There are no tanks on-site which store Tack, a sticky glue-like substance that is sprayed onto a surface before the placement of hot-mix asphalt (HMA) to aid in adhesion.

Also, there are five storage tanks (EU-SILOS, four have a capacity of 200-tons each and one with a capacity of 250-tons) where the HMA is stored after production. The HMA mix is maintained at approximately 310 - 350 degrees F for ease of placement and compaction in-place. Typical drum inlet temperatures are approximately 300 F and drum outlet temperatures are near 310 F. Exhaust gas from the dryer/mixer is directed to primary collectors consisting of a series of pulse-jet filter bags which is a cleaning system that removes particulate matter and dust from the surface of internal filter media with bursts of compressed air.

There are 1,168 pulse-jet filter bags in the baghouse system that are inspected regularly. Dust and particulate matter from the aggregate mix are mixed back into the final product. The filter bags and their contents are disposed of in a landfill and a stack with an exhaust dimension of approximately 48 inches emits the emissions into the atmosphere. There were no visible emissions during the inspection.

PTI 194-85I

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

EMISSION LIMITS

The following pollutants were tested between July 11-26, 2006. The permit was modified on April 13, 2006, due to an increase in the sulfur limit and to simplify the lab analysis for the usage of recycled used oil (RUO). Each pollutant tested below its permit limit.

<u>Pollutant</u>	<u>Limit</u>	<u>Performance Test</u>
1.1a) PM	0.04 gr/dscf	0.013 gr/dscf
1.1b) PM	0.04 lb/ton	Test result per test plan was determined in gr/dscf.
1.1c) CO	0.201 lb/ton	0.118 lb/ton
1.1d) CO	99 tons/yr	21.5 tons/yr

1.1e) SO ₂	0.08 lb/ton	0.023 lb/ton
1.1f) NO _x	0.12 lb/ton	Not tested per condition 1.15 as it was not required.
1.1g) NO _x	60 tons/yr	
1.1h) Lead	1.5E-05 lb/ton	1.11E-06
1.1i) Benzene	0.0039 lb/ton	0.00022 lb/ton
1.1j) Toluene	0.006 lb/ton	Non-detect
1.1k) Ethylbenzene	0.0015 lb/ton	Non-detect
1.1l) Xylene	0.0015 lb/ton	Non-detect
1.1m) Naphthalene	0.001 lb/ton	0.000044 lb/ton
1.1n) Formaldehyde	0.018 lb/ton	0.00263 lb/ton
1.1o) Acrolein	0.0009 lb/ton	0.00032 lb/ton
1.1p) Arsenic	4.0E-06 lb/ton	6.0E-07 lb/ton
1.1q) Nickel	1.0E-04 lb/ton	1.86E-06
1.1r) H ₂ SO ₄	0.0061 lb/ton	0.00169 lb/ton
1.1s) Manganese	1.2E-04 lb/ton	2.08E-05
1.1t) HCl	0.006 lb/ton	Non-detect

Material Usage Limits

The facility utilizes natural gas and has not utilized RUO in over 12 months. The facility does burn any hazardous waste nor does the RUO exceed the threshold for each containment listed below:

Contaminant	Limit	Units
Arsenic	5.0	ppmw
Cadmium	2.0	ppmw
Chromium	10.0	ppmw
Lead	100.0	ppmw
PCBs	1.0	ppmw
Total Halogens	4000.0	ppmw
Sulfur	1.5	Weight %
Minimum Flash Point	100.0	°F
Maximum Ash Content	1.0	Weight %
Acidity	Minimum pH = 4 Maximum pH = 10	N/A

The facility does not use waste materials – containing asbestos per 40 CFR Part 61. In addition, the facility's average recycled asphalt pavement materials vary each month between 20 – 35%. The 12-month rolling HMA paving material production averages between 300,000 – 400,000 tons (985,000-ton limit) with a 24-hour rolling total approximately between 300 – 400 tons/hr (650 tons/hr limit).

Process/Operational Limits

Based on the inspection records review, the facility has not used RUO, but past site inspections have confirmed the plan is being implemented and maintained. The fugitive dust control plan details the requirements for the site maintenance, management of on-site roadways, on-site management of haul vehicles, and the management of front-end loader operations all of which are being implemented and maintained. The facility maintains the drum mix burners and they are tuned every paving season and checked every 500-hours of operation when CO readings are conducted. The burner position is adjusted manually by staff and Rick indicated that it was set at a burner position of approximately 35%.

The facility submitted an Emission Abatement Plan for Startup, Shutdown, and Malfunctions which details hot starts should the silos become full, the identification of supervisory and maintenance personnel, a description of inspected items, replacement parts, baghouse variables and monitoring, corrective procedures and responsible persons, and drum mix and batch during normal startup procedures.

Fabric filter dust collectors are installed and maintained in a satisfactory manner and the pressure reading for the month of July was primarily 4 inches of water column.

Testing

The AQD has not requested that a verification and quantification of odor emissions from EU -HMAPLANT be performed to continue operation. The facility previously conducted performance tests to verify and quantify the HAP emission rates as detailed in Section I, as well quantifying and verifying the emission rates of PM, CO, and SO₂. The facility used both MAERS and U.S. EPA emission factors when calculating and submitting their 2022 criteria pollutant emissions (tons/yr).

Monitoring

The facility continuously monitors the virgin aggregate and RAP feed rate within each design mix. The design mix RAP feed rate at the time of inspection was 28.4% and the information is monitored within the controls to limit the RAP to 50% and details the amount of virgin aggregate added to each mix. The RAP feed rate varies typically between 25 – 35% and the aggregate feed rate averages between 65 – 80%.

The facility also monitors the carbon monoxide (CO) concentration with a handheld CO monitor upon start-up of each paving season, during a malfunction of the drum dryer/mixer or its associated burner, and after every 500 hours of operation. In addition, the facility also regularly monitors the CO emissions on monthly basis. The most recent reading occurred on June 28, 2023, and the following readings were observed (ppm) during a 30-minute period: 118, 116, 121, 122, 121, 130, 119, 121.

Based on the records review, the monitoring of emissions and the facility's operations appear to be in accordance as outlined in 40 CFR 60 Subparts A and I (Hot Mix Asphalt facilities relating to PM standards and test methods and procedures).

Recordkeeping/Reporting/Notification

The records reviewed appeared to satisfy the New Stationary Sources as specified in 40 CFR 60 Subparts A and I for Hot Mix Asphalt facilities. In addition, the facility maintains fabric filter collectors (baghouses) for their operations. Maintenance records are maintained regarding the replacement and inspection of the baghouses, and this is consistent with the Preventative Maintenance Program for the Fabric Filter Dust Collector as indicated in Appendix B.

The facility has not used RUO in over 12 months. Previous years observed during the records review indicates the identification, type, and the amounts (in gallons) of all fuel oils combusted. Vesco Oil Company is noted as the supplier which includes the gallons received and combusted. The most recent usage indicates the sulfur content is listed as 1.5%, specific gravity of 0.8827, flash point greater than 175 F, and a higher heating value over 118,000 Btu/lb.

The tons of hot mix asphalt containing RAP produced typically is between 300 – 400 tons per operational day, with the average percent of RAP per ton of hot mix asphalt produced between 25 – 35%. The facility also maintains daily records of the virgin aggregate feed rate which typically varies between 200 – 300 tons per day with a RAP feed rate of approximately 85 tons/hr. The asphalt paving material product temperature averages at least 300 – 350 F upon completion and daily mix designs are recorded upon start-up and during each mix design change.

The facility records and calculates the monthly and 12-month rolling time period emission calculation records of all criteria pollutants and HAPs listed in the Emission Limit Table for EU-HMAPLANT. The highest and lowest criteria pollutants emitted in July 2023 were NO_x at 6,519 lbs and Lead at 0.06 lbs. The highest and lowest HAP pollutants emitted in July 2023 were both Toluene and HCl at 326 lbs, and Arsenic at 0.03 lbs.

The highest and lowest 12-month rolling totals for criteria pollutants over the last 12-months have been NO_x at 43,901 lbs (22 tons) and Lead at 0.41 lbs in. The July 2023 aggregate criteria emission total was 16,626 lbs (8 tons).

The highest and lowest 12-month rolling totals for HAPs over the last 12-months have been Toluene/HCl at 2,195 lbs (1.1 tons) and Arsenic at 0.23 lbs, respectively. The July 2023 HAP emission total was 1,083 lbs (0.54 tons).

In addition, all CO emissions and related production data including the dates and times emissions were monitored are recorded by the facility. Readings were most recently conducted in June 2023 and the facility often monitors the CO emission readings on multiple occasions each month. Readings were conducted on four occasions in June 2023 on the 2nd, 10th, 24th, and 28th. Readings range between 110 – 170 ppm resulting in 0.064 lbs/ton (emission limit 0.201 lbs/ton).

The facility also maintains the daily, monthly and 12-month rolling time period records for the amount of HMA paving materials produced from EU-HMAPLANT. The daily HMA production in July 2023 varied between 300 – 400 tons/hr. The highest and lowest monthly

totals over the last 12-months occurred in August 2022 with 74,000 tons and April 2023 with 744 tons, respectively. The current 12-month rolling production total is 365,843 tons occurring from August 2022 to July 2023.

Stack/Vent Restrictions

There did not appear to be any visible emissions emanating from the facility's stack.

EU-YARD

Process/Operational Limits

The facility maintains and implements the Fugitive Dust Control Plan for the plant roadways, yard, material storage piles, and all material handling operations specified in Appendix A. All activities performed to control fugitive dust are documented by the facility. The facility reports their annual emissions of particulate matter for EU-YARD through MAERS. The facility used a MAERS emission factor of 6.2 lb/mile for PM₁₀ for their roadways totaling 5,017 lbs.

EU-ACTANKS

PROCESS/OPERATIONAL LIMITS

The vapor condensation and recovery system is implemented and maintained by the facility. No cranks or leaks were observed at the time of inspection. The facility inspects the filter media and inspects the tanks at least once or twice a season.

EU-SILOS

PROCESS/OPERATIONAL LIMITS

All silo load activities occur in an area which is permanently enclosed except for truck entrance and exit points. The silo load-out control system is maintained and operated in a satisfactory manner for all emissions vented into the burning zone.

FG-FACILITY

Emission Limits

The total emission rate of HAPs listed in Section I shall not exceed 8.9 tons per rolling 12-month period for each individual HAP, nor 22.49 tons per rolling 12-month period for all HAPs combined.

The current highest and lowest individual HAP 12-month rolling total is Toluene and Hydrogen Chloride at 2,195 lbs (1.1 tons), and Arsenic at 0.23 lbs (1.15 x 10⁻⁴ tons), respectively. The current 12-month rolling total is 7,291 lbs (3.65 tons).

Appendix A – Fugitive Dust Control Plan

SITE MAINTENANCE

Dust on all areas where vehicular traffic occurs is controlled by the application of water, sweeping, or vacuuming. This occurs at a minimum of one to two times per day or more

frequently according to facility records. Watering of the yard, chloride applications, and wet sweeping are the methods employed by the facility. Signs are posted to advise to drivers of the speed limit. There were no visible emissions emanating off of the storage piles.

MANAGEMENT OF ON -SITE ROADWAYS

There were no visible fugitive dust issues with the roadways, aggregate piles, or paved surfaces.

ON-SITE MANAGEMENT OF HAUL VEHICLES

All trucks that were observed entering and exiting the facility appeared to have their loads covered.

MANAGEMENT OF FRONT-END LOADER OPERATIONS

There were no observed issues with the any of the front-end loaders transporting materials.

RECORDKEEPING

The facility maintains a daily log of all dust suppressant applications and activities performed regarding dust prevention. This includes sweeping, calcium chloride applications, and water suppression.

FUGITIVE EMISSIONS FROM PROCESS EQUIPMENT AND FABRIC FILTER COLLECTOR

There were no fugitive emissions due to leak(s) or malfunction(s) from any transfer system, storage bin, mixer, hopper, or filter fabric observed during the inspection.

Appendix B - Preventative Maintenance Program for the Fabric Filter Collector

The facility oversees the stack opacity, excess emissions, burner tuning, baghouse inspection, bags replaced, and baghouse pressure drop.

FABRIC FILTER COLLECTOR OPERATING PRESSURE DROP

The pressure drop across the baghouse is measured continuously. The minimum pressure drop shall not be less than 2 inches, water gauge, except when a large number of filter bags have been replaced and the maximum pressure drop shall not be greater than 8 inches, water gauge. The daily pressure drop varies between 3 to 4 inches H₂O. The pressure drop is recorded daily and was 4.0 inches H₂O at the time of inspection.

FABRIC FILTER COLLECTOR /PLANT ALARM SYSTEM

The baghouse is equipped with a high temperature sensor and alarm system. The alarm system is set to alarm when the high temperature set-point has been violated. The temperature for the facility sounds off at 400 F (the filter bags will catch fire at 450 F). A sequential shut-down of the plant will occur if the situation is not resolved within a very short period of time after the alarm sounds.

HANDLING AND STORAGE OF FABRIC FILTER DUST

The accumulated baghouse dust is disposed of in a landfill.

PIPING AND SEALS MAINTENANCE

There were no visible leaks on site.

VISIBLE EMISSIONS AND ACTIONS TO BE TAKEN IN THE EVENT OF

There were no visible emissions from the stack at the time of inspection.

BLACK LIGHT INSPECTIONS

A black light inspection occurs every year at the onset of the paving season and as necessary during the fine-tuning of the burners.

INVENTORY OF FILTER BAGS

The facility maintains a minimum of 60 filter bags at all times.

FABRIC FILTER DUST COLLECTOR INSPECTION RECORD

Visual inspections of the interior components of the baghouse are performed by the facility when the blacklight inspection is performed and during any malfunction event. Sealings are inspected and filter fabric replacement is performed as needed. There have not been any visible emissions observed according to facility records.

Appendix C - COMPLIANCE MONITORING PLAN (CMP) FOR FACILITIES BURNING RECYCLED USED OIL (RUO)

The facility has not used RUO in over 12 months. The most recent usage occurred in June 2022. Each shipment from the used oil supplier was accompanied by the supplier's documentation demonstrating that the used oil meets the specification levels below, and the documentation includes supplier certification and analytical data. Each shipment was screened for halogens and contained the supplied laboratory analysis from Summit Environmental Technologies located in Cuyahoga Falls, OH.

ALLOWABLE LEVELS

Allowable levels for RUO properties and constituents are listed in Table 1.

Table 1

PROPERTY/CONSTITUENT	ALLOWABLE LEVEL	Facility Levels
Higher Heating Value	17,000 Btu per pound, minimum	18,018 Btu/lb
Arsenic	5.0 ppm, maximum	< 1.00ppm
Cadmium	2.0 ppm, maximum	0.158 ppm
Chromium	10.0 ppm, maximum	< 4.00 ppm
Lead	100.0 ppm, maximum	1.02 ppm
Sulfur	1.5 percent, maximum	0.2037%
Polychlorinated Biphenyls (PCBs)	1.0 ppm, maximum	< 1.00 ppm

PROPERTY/CONSTITUENT	ALLOWABLE LEVEL	Facility Levels
Total Halogens	4,000 ppm, maximum	200 ppm

The facility utilizes Method 2 – as on-site qualification which requires a quarterly split sample analysis for all shipments which are not from a pre-qualified batch. One quarterly sample with the required laboratory analysis was previously viewed.

Conclusion

Based on the AQD inspection and records review, Ace-Saginaw Paving Company is in compliance with the aforementioned requirements and conditions of the facility's Permit to Install, 194-851.

NAME Robert Joseph

DATE 08-14-23

SUPERVISOR Joyce