DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N829549848

FACILITY: SUPERIOR ASPHALT INC		**SRN / ID:** N8295
LOCATION: 6900 EAST PARIS INDUSTRIAL, CALEDONIA		**DISTRICT:** Grand Rapids
CITY: CALEDONIA		**COUNTY:** KENT
CONTACT: Nate Voruganti , Laboratory		**ACTIVITY DATE:** 08/09/2019
STAFF: Chris Robinson	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Self Initiated on-site inspection to determine the facility's compliance status with PTI No. 154-09 and other applicable air quality rules and regulations.		
RESOLVED COMPLAINTS: C-19-01971		

Chris Robinson (CR) from the Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) was initially onsite to follow-up with an odor complaint received on August 9, 2019 for Superior Asphalt Inc. (SRN N8295). In addition to the complaint follow-up CR conducted an unannounced self initiated inspection to determine the facility's compliance status with respect to Permit to Install (PTI) No. 154-09 and applicable State and Federal Air Quality Rules and Regulations. The facility is located at 6900 East Paris Industrial in Caledonia, Kent County, Michigan. CR met with Mr. Nate Voruganti, Laboratory staff, and Mr. Tony Stepek, plant Manager.

Weather conditions were fair, approximately 76oF with winds coming out of the west-northwest at approximately 12mph (www.weatherunderground.com). CR surveyed the perimeter of the facility upon arrival for odors and visible emissions. Visible emissions were noticed and is discussed below. A fleeting asphalt odor with an intensity of approximately 2 was observed east of the facility along the Paul B Henry Trail.

FACILITY DESCRIPTION

Superior Asphalt, Inc. (Superior) is a Hot Mix Asphalt (HMA) plant. The facility generally operates from May to October, but can be variable based on the weather.

COMPLIANCE EVALUATION

Superior is an opt out source for hazardous air pollutants (HAPs) and has emission limits for carbon monoxide (CO) and particulate matter (PM). PTI No. 154-09 establishes plant wide (FG-Facility) HAP limits. The facility is subject to 40 CFR Part 60 Subpart I New Source Performance Standards for Hot Mix Asphalt Facilities. Subpart I requirements for particulate matter were incorporated into the permit to install.

The following is covered under PTI No. 154-09:

Emission Unit ID	Emission Unit Description
EUHMAPLANT	Hot mix asphalt (HMA) facility including: Aggregate conveyors, 300 ton per hour counter-flow drum, Fabric filter dust collector
EUYARD	Fugitive dust sources including: Plant roadways, Plant yard, Material storage piles, Material handling operations (excluding cold feed aggregate bins)
EUACTANKS	Liquid asphalt cement storage tanks
EUSILOS	Hot Mix Asphalt (HMA) paving material product storage silos

PTI 154-09 - EUHMAPLANT covers the Hot Mix Asphalt (HMA) plant consisting of aggregate conveyors and a 300 ton per hour counter-flow drum. Particulate matter emissions are controlled by a fabric filter dust collector.

Superior is subject to different emission limits as described in Special Conditions (SC) EUHMAPLANT I.1-19 of the permit. Compliance is demonstrated through successful testing, adequate emission calculations and by not exceeding material throughput limits. The facility conducted emission testing, as required per SC V.2, in 2010 in order to demonstrate compliance with the Toxic Air Contaminants (TACs) emission rate as well as PM, CO, SO2, and NOx, emission rates as required per SC V.3 (see testing report for full detail). The facility's only ton per 12-month rolling time period is for CO. Superior tracks the emissions of CO based on production and the facility's highest emission rate for CO during 2018 and 2019, thus far, occurred in October of 2018. The facility emitted 26.18 tons of CO (per 12-month rolling basis) which is below the 89.9 tpy limit.

Fuel usage is limited to natural gas, propane, Nos. 1 through 6 fuel oils, or recycled used oil (RUO). Per discussion with Mr. Stepek and Mr. Voruganti, the facility only uses natural gas. The RUO was only used during initial testing. The facility does not use any materials containing asbestos. RAP usage is kept below the permit

limit of 50%. The records for 2019 indicated that the highest percentage of RAP used was on June 11, 2019 at 30.227%.

The total amount of HMA Superior can process is limited to 895,000 tons per rolling 12-month time period. As of July 31, 2019, the maximum amount processed since January 2018 was in October of 2018 at 402,814 tons. The counterflow drum has a design specification of 300 tons per hour. Per Mr. Stepek the facility cannot operate over 300 tons per hour and records show that the maximum 2019 processing rate was 287.322 tons per hour on 8/5/2019.

Superior maintains a Fugitive Dust Plan, a Preventative Maintenance Program, an Emissions Abatement Plan for Startup shutdowns and malfunctions and a Compliance Monitoring Plan (CMP) for the RUO. All of which are included in Appendices A through D of PTI 154-09. Appendix D is only for the RUO, which Superior no longer uses.

Superior is required, per SC EUHMAPLANT III.5 of the permit, to maintain the efficiency of the drum mix burners, to control CO emissions by fine tuning the burners for proper operation. This shall be done at the start of each paving season, upon a malfunction of EUHMAPLANT as shown by the CO emission monitoring data (concentration exceeds 500 ppmv), and after every 500 hours of operation. A spreadsheet of CO readings was provided (**Attachment A**). Based on this information a CO dataset consists of eight (8) individual readings all of which are below 500 ppm. Special Condition EUHMAPLANT VI.3.c requires the data set to be collected over a total time period of 30 minutes. Data provided does not include timestamps nor an end time for each reading. This will be discussed with the facility. Based on the provided records CO monitoring is being conducted as required and there are no readings above 500 ppm.

Superior is required to have a fabric filter dust collector installed, maintained, and operated in a satisfactory manner. PER SC EUHMAPLANT IV.1, satisfactory operation of the fabric filter dust collector requires a pressure drop range between 2 and 10 inches of water column. At the time of this inspection the pressure drop was at approximately 5.1" w.c. Although this is within the acceptable range specified in SC EUHMAPLANT IV.1 and Appendix B Item 1a of the permit, Mr. Stepek brought to AQD's attention that the baghouse could not operate over 6.6" w.c. without experiencing issues. Mr. Stepek determined this range by operating the system over the past years. It's unclear why the operating range is listed as 2-10" in the permit. However, the high pressure alarm is set to 6.6"w.c.

CR discussed observations observed offsite on August 8, 2019 (Activity Report CA_N829549847) and again just prior to the inspection on August 9, 2019. CR observed a light brown color in the exhaust during both days with a fine but very minimal amount of fallout on August 9, 2019. This was discussed with both Mr. Voruganti and Mr. Stepek. Mr. Stepek conducted a black light test on August 10, 2019. Four gallons of powder was used and two (2) bags were replaced.

At this time the AQD is not requesting testing for odors or for additional emission testing as allowed in SC EUHMAPLANT V.1. Maintenance is conducted to keep the equipment in good operating condition as required by SC EUHMAPLANT VI.5. Maintenance records appeared consistent with the facility's Preventative Maintenance Program specified in Appendix B of the Permit. Records were provided and are included in **Attachment B**.

The facility maintains a spreadsheet for tracking all emissions (Criteria Pollutants and TACs), products used and usage amounts as required per SC EUHMAPLANT VI.6 and VI.8-10 (**Attachment C**).

The following information is monitored continuously, per SC EUHMAPLANT VI.2-3 and collected intermittently throughout the day, while operating as required per SC EUHMAPLANT VI.7.a-d: The virgin aggregate feed rate, RAP feed rate, The asphalt paving material product temperature and Information sufficient to identify all components of the asphalt paving material mixture. Daily records were reviewed onsite. The most recent record generated at the time of this inspection was provided and is included in **Attachment D**.

Exhaust gases from the plant appear to be vented unobstructed vertically. CR used a clinometer to confirm stack height on August 28, 2019. Two (2) different locations were selected which suggested a stack height of between 50-60 feet. High winds prevented accurate measurements, therefore CR spoke to Mr. Voruganti on August 29, 2019 requesting that the facility directly measure the stack height and inside dimension. AQD staff CR and Scott Evans were onsite on August 30, 2019, while Superior's staff measured the baghouse exhaust stack. Stack height measured 60.3-feet with an inside diameter of 47-inches, meeting the requirements specified in SC EUHMAPLANT VIII.1.

PTI 154-09 - EUYARD consists of fugitive dust sources including: plant roadways, plant yard, material storage piles and material handling operations (excluding cold feed aggregate bins). The facility stock yard was relatively well maintained. Superior staff were moving aggregate with a front-end loader toward the back of the property. There was not a significant amount of dust generated from the traffic at that time. The aggregate is loaded into hoppers where it is fed via a conveyor system into the drum. Superior uses a counterflow drum to heat the aggregate prior to blending with the liquid asphalt. The facility also uses recycled asphalt product (RAP) to blend with the mix. Once blended the mix is loaded into silos and then dispensed to asphalt trucks below. The facility does not have enclosed load out for the trucks. Actual annual emissions are calculated by the facility using EPA AP-42 emission factors as well as stack test data. This information is reported to the Michigan Air Emissions Reporting System (MAERS). Although this facility was not targeted for audit in 2019 for 2018 submittals, CR did a cursory review on 8/21/2019 to meet the requirements of a Full Compliance Evaluation (FCE). The submittal appeared complete with no changes required. The reported emissions are included in **Attachment E** and summarized in the table below. A fugitive Dust Control Plan is included in Appendix A of the PTI. At the time of this inspection it appeared that Superior was following the dust control plan.

Pollutant	Amount	
	Lb.	Tons
CO	53,691.59	26.85
LEAD	0.25	0.0001
NOX	12,227.69	6.11
PM10, FLTRBLE	13,189.28	6.59
PM10, PRIMARY	26,439.61	13.22
PM2.5, FLTRBL	259.30	0.13
SO2	1,374.47	0.69
VOC	16,664.11	8.33

PTI 154-09 - EUACTANKS consists of two (liquid asphalt cement storage tanks. A third tank was installed at the beginning of the 2019 season. Superior is claiming that the installation of this third tank is exempt from Rule 201 permitting requirements per Rule 282(2)(b) for "*liquid asphalt storage tanks controlled by an appropriately designed and operated vapor condensation and recovery system or an equivalent control system*", **See Attachment D**. All three silos are equipped, by the manufacturer (HY-WAY), with a vapor condensation and recovery system (See pictures below). Superior staff were unaware of how these systems work, so CR contacted the manufacturer on August 12, 2019. The condensers are cooled by ambient air and do not collect the condensate. As the steam exiting the silo is condensed back into a liquid, the liquid drops back into the silo through the condenser. Odors have been associated with the filling of these silos, so CR discussed the possible use of a chiller to better help condense the steam to control odors. The facility is currently using Ecosorb for odor control. The Ecosorb manufacturer is tailoring the formulation to Superior's needs. Mr. Voruganti showed CR a letter from the manufacturer indicating that a new formulation has been developed that should control up to 80% of the odors.

PTI 154-09 - EUSILOS consists of HMA paving material product storage silos equipped with an emissions (blue flame) capture system that captures and re-redirects emissions back into the drum burner for further destruction. Silo emissions are NOT control by the baghouse. The system appeared to be operating properly on August 8, 2019 and August 9, 2019. A sixth (6) silo was added in 2019 prior to the start of the season. Superior is claiming that the installation of this silo is exempt from Rule 201 permitting requirements per Rule 282(2)(c) for "*an asphalt concrete storage silo that has all its emissions vented back into the burning zone of the kiln or that has an equivalent control system*" See **Attachment D**. This silo is also equipped with the blue flame capture system

PTI 154 - FGFACILITY consists of facility-wide HAP emission limits. Superior Asphalt opted out of Title V by accepting facility wide Federally enforceable restrictions limiting HAPs to less than 9tpy for any individual HAP and to 22.5 tpy for all HAPs combined. Records were accessible onsite and were provided (**Attachment C**). Monthly and Annual HAP emissions were provided for the time period of January 2018 through July 2019. The highest calculated annual combined HAP emissions were 0.84 tons in December of 2018, which is well under both the individual and aggregate HAP limits.

Miscellaneous

Superior installed a Tackifier tank in 2011 under Rule 201 permit exemption Rule 282(2)(b) for "liquid asphalt storage tanks controlled by an appropriately designed and operated vapor condensation and

recovery system or an equivalent control system". Per discussions with Mr. Voruganti the tackifier used in this tank consists of liquid asphalt diluted with water which is kept at a much lower temperature than the liquid asphalt stored in the AC tanks. The tackifier is used only at jobsites for "adhering" layers of asphalt together.

Per Mr. Voruganti Superior will be submitting an application to modify PTI No. 154-09 to include replacing the current 600 filter baghouse with a 900 filter baghouse, replacing the current 300 TPH counter-flow drum with a new 500 TPH counter-flow drum and adding loadout control. CR discussed permitting requirements as well as informing him that Rule 201 prohibits the installation of equipment unless it is exempt or permitted.

CONCLUSION

Based on observations and discussions, Superior Asphalt Inc. appears to be in compliance with the requirements of PTI 154-09 and applicable state and federal air quality Rules and regulations. In addition, odors were not observed at a duration or intensity that would warrant a violation notice.

ATTACHMENTS

A - CO Data
B - Maintenance Records
C - Air Emission Records (CD)
D - Example of Daily Production Report
E - 2018 MAERS Data
F - Email Correspondence

Image 1(Superior Asphalt) : AC Vapor Condensate System

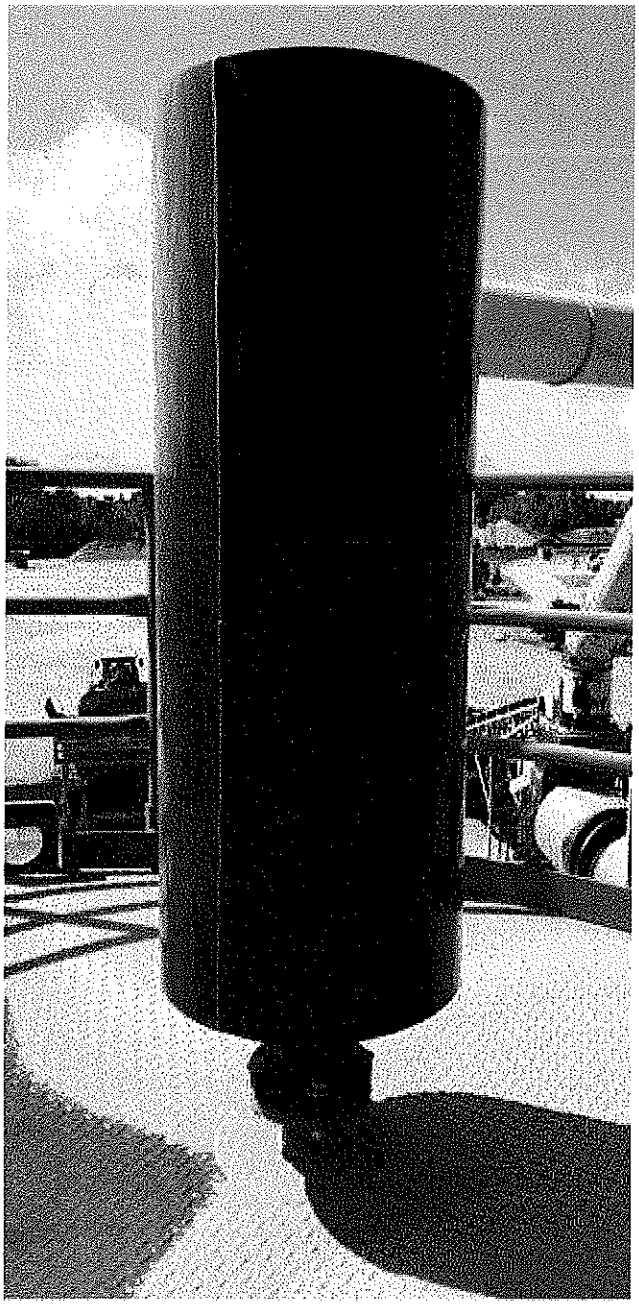

Image 2(Superior Asphalt) : AC Vapor Condensate System

NAME _____ DATE 9/19/2019 SUPERVISOR _____