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

B428759848

FACILITY: CADILLAC ASPHALT, L.L.C., Clarkston		**SRN / ID:** B4287
LOCATION: 4751 WHITE LAKE RD, CLARKSTON		**DISTRICT:** Warren
CITY: CLARKSTON		**COUNTY:** OAKLAND
CONTACT: Sue Hanf , Environmental Engineer		**ACTIVITY DATE:** 07/06/2021
STAFF: Kaitlyn Leffert	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: FY2021 Inspection		
RESOLVED COMPLAINTS:		

On July 6, 2021, I, Kaitlyn Leffert, Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff, conducted a scheduled inspection of Cadillac Asphalt, located at 4751 White Lake Road, Clarkston, Michigan. The facility is identified by the Source Registration Number (SRN) of B4287. The purpose of this inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); AQD administrative rules; 40 CFR, part 60, Subpart I, Standards of Performance for Hot Mix Asphalt Facilities; and Permit to Install (PTI) Number 443-82H.

Cadillac Asphalt is a hot-mix asphalt (HMA) facility that produces asphalt products used for paving roads, construction, and non-roadway applications. Cadillac Asphalt is permitted to operate a hot mix asphalt plant, which includes a 650 tons per hour counterflow drum dryer/mixer, aggregate conveyors, and a fabric filter dust collector. The facility is also permitted to operate liquid asphalt cement storage tanks, HMA paving material product storage silos, and fugitive dust sources, including the plant yard and roadways.

On June 24th, 2021, I emailed Sue Hanf to schedule the inspection and request copies of the required records. While inspections are typically unannounced, the inspection was scheduled ahead of time according to existing department COVID-19 policies. On July 1st, Ms. Hanf emailed to provide the requested records and to schedule the inspection for July 6th.

Facility Walk Through

On July 6th, I arrived at the Cadillac Asphalt Clarkston plant at approximately 10:15am. I was greeted by Sue Hanf and Mike Sekan, Plant Manager. The plant was operating on the day of my inspection. The plant consists of six AC tanks, 12 cold feed bins, a counterflow drum, and four storage silos. Emissions from the hot mix asphalt (HMA) plant are controlled by a baghouse. Emissions from the storage silos are captured by the blue smoke control system. One of the six AC tanks is newly installed this year. The AQD Warren District Office was notified of the installation of a new 20,000 gallon AC tack tank in February 2021. This tank has been installed but is not yet operating. The tank is expected to be put online soon, once a heater is installed.

The permit requires that the blue smoke emission capture system be installed and operated on the storage silos when the asphalt plant is operating (Special Condition 4.2). During last year's scheduled inspection, the plant was found to be operating without the blue smoke system installed. A violation notice was issued to the facility for operating without this system installed and operating. A new blue smoke system was installed and effective as of August 4th, 2020 and

the violation was subsequently resolved. During this inspection, I noted that the blue smoke emission capture system appeared to be installed and operating.

We first walked around the asphalt plant to observe the conveyors and hot mix drum. The plant was operating during my inspection. We walked over to observe the fabric filter dust collector. The baghouse was installed and operating during my inspection. The baghouse is part of a closed loop system and the material collected in the baghouse is returned back to the drum during the asphalt production process. I did not observe any signs of leaks or visible emission being generated around the baghouse.

Following our walk through of the site, we entered the control room. I noted that the current production rate was 328 tons per hour. Appendix B, Preventative Maintenance Program for the Fabric Filter Dust Collector, specifies that the pressure drop of the baghouse should be maintained at 2 to 10 inches of water. While in the control room, I noted that the pressure drop for the baghouse was 4 inches of water. I was also informed that the plant had replaced all of filters and 45 valves in the baghouse prior to the beginning of operation for the 2021 season.

The facility is required to implement and maintain a fugitive dust plan, as specified in Appendix A of PTI 443-82H. Appendix A specifies that the site yard and roadways should be controlled by the application of water, sweeping, or other applicable control methods to minimize the generation of fugitive dust. While on site, I observed that the roadway and site yard were covered in a thin layer of dust and that fugitive dust was being generated by vehicles moving around the site yard. The fugitive dust generated on the site was brief and did not migrate off site. I was informed that the facility had been shut down for the holiday weekend and had not yet swept the site since resuming operation. The facility planned to sweep the site later that day and chloride was going to be applied either later that day or on the following day. Typically, Cadillac Asphalt sweeps the site yard daily and applies chloride on an as needed basis.

In addition, Appendix A specifies that the speed of vehicles on the yard should be limited to 10 mph and signs should be posted indicating the speed limit. I noted that there was a sign on the site indicating the speed limit was 9 mph. In addition, the fugitive dust plan specifies that drop distances of stock piles should be minimized. During my inspection of the site, I observed that drop distances appeared to be minimized across the plant and I did not observe any dust formation during the transfer of materials to and from stock piles across the yard.

<u>Records Review</u>

I was provided copies of all requested records on July 1st for the entire 2020 operating season through May 2021. Cadillac Asphalt began operation for the 2021 season on April 14, 2021. The following records review is broken out by the corresponding special condition in the permit.

Maintenance Records – S.C. 1.22

I was provided a log of maintenance activities at the plant, which also included records of the annual baghouse inspections, as well as records of daily plant checks, which include an inspection of plant roadways, cold feed bins, aggregate feed belts, checking seals for leaks, and opacity. The records indicate there were a number of maintenance activities performed on the plant prior to beginning operation of the plant for the 2021 season. These maintenance activities included replacement of all bags in the baghouse, replacement of 45 valves in the baghouse, rebuilding of

the tops of two of the silos, as well as the replacement and installation of various chains, pulleys, and electrical systems at the plant.

In addition, the daily records indicated when fugitive dust control was used on the site yard, as required by Appendix A. Fugitive dust control was utilized on every day that the plant was operated, with the exception of days when it rained on the site yard. Dust controls used were either sweeping the yard, application of water, or the application of chloride. Water application or sweeping of the site yard are the most frequent controls used at the plant, while chloride had only been applied once so far in the 2021 season, on May 12, 2021.

Fuel Oils – S.C. 1.23(a) and (b)

The plant is required to maintain records of the type, amount, and sulfur content of all fuel oils combusted. The provided records indicate that only natural gas was used at the plant over the course of the compliance period. Since fuel oils were not combusted at the plant, compliance with the additional material limits and recordkeeping requirements associated with fuel oil usage was not assessed.

RAP Content – S.C. 1.23(c)

PTI No. 443-82H limits the amount of reclaimed asphalt pavement (RAP) material in the asphalt mixture process to 50%, based on a monthly average (S.C. 1.5). In order to demonstrate compliance with this requirement, the facility is required to maintain records of the tons of hot mix asphalt (HMA) containing RAP produced, including the average percent of RAP per ton of HMA produced. The facility provided daily records of RAP content, as well as monthly average RAP content. Daily RAP content across the 2020 season and the 2021 season so far ranged from 15.6 to 47.3%. The highest daily RAP content was observed on April 14, 2021. The average monthly RAP content in May 2021 was 26.0%. The highest monthly average content over the compliance period was 28.0% in September 2020. The recorded monthly average RAP content appears to demonstrate compliance with the permit limit of 50% RAP.

Daily Production Information – S.C. 1.24

The facility is required to continuously monitor and maintain records of the virgin aggregate feed rate and the reclaimed asphalt pavement (RAP) feed rate (SC 1.17, 1.24). Feed rates are continuously set and monitored during operation from the control room at the plant. The provided records included a daily print sheet for June 29, 2021, as well as a monthly summary for May 2021. On June 29th, the asphalt production process operated for a total of 1.1 hours with 166 tons of virgin aggregate and 128 tons of RAP input into the process. In addition, the facility is required to record the temperature of the asphalt product. On June 29th, the temperature of the HMA produced was 300°F.

Criteria Pollutant and Toxic Air Contaminant Emissions Calculations – S.C. 1.25 and 1.26

The permit limits emissions of particulate matter (PM), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen oxide (NOx), lead, benzene, toluene, ethylbenzene, xylene, naphthalene, formaldehyde, acrolein, arsenic, nickel, H_2SO_4, manganese, and hydrogen chloride on a pounds of emissions per ton of HMA produced basis (SC 1.1a through 1.1s). Compliance with these emission limits is demonstrated through a combination of stack testing and records of emissions

calculations. Stack testing to determine emission rates of the above listed pollutants was completed in August 2007, according to the requirements in SC 1.15 and SC 1.16. The 2007 stack test results showed the facility to be in compliance with the permitted emission limits. The 2007 PM Stack Test also satisfied the requirement to verify PM emission rates in 40 CFR, Part 60, Subpart I, Standards of Performance for Hot Mix Asphalt Facilities.

I was provided daily (in lbs/day), monthly, and 12-month rolling emissions calculations for all of pollutants with permitted emission limits, as is required by S.C. 1.25. Daily emissions are calculated using AP-42 emission factors for asphalt production using natural gas. Daily emissions calculations are then used to calculate the monthly and 12-month rolling emissions for all pollutants.

PTI No. 443-82H limits emissions of carbon monoxide to 89.9 tons per year (tpy), as determined on a 12-month rolling basis. The provided emission calculations indicate that 12-month rolling emissions at the end of May 2021 were 26.4 tpy. The highest 12-month rolling total over the period of January 2020 through May 2021 was recorded at the end of July 2020, at 27.8 tpy.

Cadillac Asphalt is also required to maintain records of daily hydrogen chloride (HCl) emissions, as required by S.C. 1.26. Emissions of HCl are limited to 0.006 lb/ton of HMA produced. This emission limit is based on the combustion of fuel oils at the facility at the time of permitting. Since the facility now uses natural gas instead of fuel oils, it is not expected that HCl emissions would be generated by the process. The records provided by the facility also indicate that HCl is not emitted from the plant.

Carbon Monoxide Monitoring – S.C. 1.18 and 1.27

Cadillac Asphalt is required to maintain records of handheld carbon monoxide (CO) measurements taken at the start of each paving season, after every 500 hours of operation, and upon malfunction of the drum dryer or associated burner. According to the permit, handheld CO readings should read below 500 ppm to ensure that the plant is operating correctly. Based on the records, handheld CO monitoring was completed on April 22, 2021 at start-up of the plant, and again on June 5, 2021. During the 2020 season, CO monitoring was completed on April 21, 2020 and July 9, 2020. CO readings were the highest at the most recent monitoring completed on June 5, 2021, with an average CO reading of 371 ppm. Eight readings were made over 32 minutes, which ranged from 352 to 392 ppm.

Monthly Production Records – S.C. 1.28

The provided records included daily, monthly, and 12-month rolling records of HMA produced at the plant. The permit limits hourly production of HMA paving materials to 650 tons per hour, which is determined by dividing the daily HMA production by the amount of daily operating hours (S.C. 1.7). The provided daily production log shows that hourly HMA production ranged from 231 to 409 tons per hour from May 2020 through June 2021.

The permit also limits annual HMA produced to 895,000 tons of HMA per 12-month rolling time period (SC 1.6). The 12-month rolling total HMA produced at the end of May 2021 was 254,857 tons. The highest 12-month rolling total over the compliance period was recorded in January 2020 at 392,532 tons.

Fugitive Dust Emissions – S.C. 2.2

Cadillac Asphalt is required to calculate fugitive dust emissions on an annual basis and report them to the AQD through annual emissions reporting. The facility has been including fugitive dust emission as part of their annual submittals through the Michigan Air Emissions Reporting Systems (MAERS).

Hazardous Air Pollutant Emission Calculations – S.C. 5.2

The permit also sets facility-wide limits of 8.9 tpy for any individual HAP and 22.4 tpy for aggregate HAPs, as determined on a 12-month rolling basis. Aggregate HAP emissions at the end of May 2021 were 0.86 tpy. The highest 12-month rolling total emissions over the previous two operating seasons was recorded in July 2020, at 0.91 tpy. The individual HAP that consistently has the highest emissions is formaldehyde. The 12-month rolling total formaldehyde emissions at the end of May 2021 were 0.63 tpy. The highest formaldehyde emissions recorded over the previous two years was also in July 2020, at 0.66 tpy.

Appendix B

Appendix B requires that the pressure drop of the fabric filter be monitored continuously and recorded at least once per day. The pressure drop across the baghouse is continuously monitored in the control room and is recorded in the daily production log once per day. The records show that over the course of the 2020 season and the 2021 season so far, the pressure drop across the baghouse ranged from 3.2 to 4.5 inches of water. The recorded values, as well as those observed during the inspection indicate compliance with the allowed pressure drop range in the permit of 2.0 to 10.0 inches of water (SC 1.13; Appendix B).

Appendix B also requires that the plant conduct an annual black light inspection, maintain an inventory of fabric filter bags, and an inspection record of daily and annual baghouse inspections. All of these activities were documented in the maintenance log. As previously noted, all of the bags and 45 valves in the baghouse were replaced prior to the start of the 2021 operating season. According to the provided records, the valves were replaced on March 19, 2021 and the bags were replaced on March 26, 2021. In addition, the most recent blacklight inspection took place on the same day the bags were replaced, on March 26th.

<u>Conclusion</u>

Based on my on-site inspection and review of the required recordkeeping, the Cadillac Asphalt Clarkston Plant appears to be operating in compliance with all conditions of PTI No. 443-82H and all applicable air quality rules and regulations.

NAME Kaitlyn Leffert DATE 09/29/2021 SUPERVISOR K. Kelly