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DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B319550026

FACILITY: CADILLAC ASPHALT PRODUCTS		**SRN / ID:** B3195
LOCATION: 670 S DIX AVE, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Brad Hillard , Division Manager		**ACTIVITY DATE:** 08/22/2019
STAFF: Jonathan Lamb	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled inspection, FY 2019		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, EGLE-AQD
PERSONNEL PRESENT: John Nance, Plant Operator
FACILITY PHONE NUMBER: (313) 849-9374
COMPLIANCE CONTACT: Sue Hanf (SHanf@mipmc.com)

FACILITY BACKGROUND:

Cadillac Asphalt – Dix Division produces hot mix asphalt (HMA) for various customers, including MDOT, City of Detroit, and Wayne County, as well as their own paving operations and independent pavers. This facility uses a counter-flow drum system which is controlled by a baghouse. The facility is located in a heavily industrialized area near AK Steel and Marathon Petroleum. Cadillac Asphalt is headquartered in Farmington Hills, Michigan.

Cadillac Asphalt – Dix Division is a seasonal operation, usually starting production in late April/early May and ending late November/early December. The facility is in operation 7 days per week, 12 hours per day (7:00 AM to 5:00 PM). There are currently 6 employees at this site.

COMPLAINT/COMPLIANCE HISTORY:

Facility was determined to be in compliance during the last inspection performed on August 26, 2015. No complaints have been received since that time.

Cadillac Asphalt – Dix Division is operating under a Consent Order for the control of fugitive dust emissions, entered May 19, 1993, as part of the PM-10 State Implementation Plan (SIP No. 5-1993). This fugitive dust plan is roughly equivalent to the fugitive dust plan contained in Permit to Install No. 57-01B.

PROCESS DESCRIPTION/EQUIPMENT:

The facility has the capacity to produce up to 600 tons of hot mix asphalt (HMA) per hour. Cadillac Asphalt is currently producing about 70-75 different formulations of hot mix asphalt, based on customer specifications. Production is generally done on a batch basis during operating hours, depending on the orders each day. To produce each type of asphalt, various formulations of aggregate (including limestone and sand), recycled asphalt product (RAP), and liquid asphalt cement are mixed at a ratio according to customer specifications. Formulations vary depending on the intended use of the asphalt; for example, a base mix uses a courser aggregate while a surface mix will contain more fines to produce a smoother driving surface.

Aggregate is delivered via truck on a daily basis and dumped into stockpiles in the yard. Various sizes of virgin aggregate are moved from stockpiles to cold-feed bins via a front-end

loader. A belt conveyor sends the aggregate through a scalping screen and across a weighbridge. The uniformly sized and weighed cold aggregate is then fed into the front end of an inclined counter-flow drum. The counter-flow drum uses a dual barrel system. The cold aggregate is fed into the inner drum and flows towards the flame end of the drum. The burner is located inside the inner drum. The aggregate dries as it approaches the flame and is then discharged to the outer drum. RAP and liquid asphalt are then fed into the outer drum, where it mixes with the aggregate to produce hot mix asphalt. RAP, which is crushed asphalt from old roads, is fed into the mixer at mid-drum, after the burner. Liquid asphalt cement, which is stored in heated tanks, is then metered into the lower half of the drum (the last 10-12 feet) following the RAP addition. Since neither the RAP nor the liquid asphalt come in direct contact with the flame, emissions and odors tend to be less than those found with parallel-flow drums. The mix temperature is usually maintained between 310-320°F. The finished hot mix asphalt product is discharged from the mixer onto a slat conveyor. This conveyor elevates the hot mix asphalt to feed into the top of one of five 200-ton storage silos, where the mix is stored for no more than 24-hours before truck loading and transport to the job site.

Prior to use, RAP is crushed on site with a portable crusher; Thompson Recycle is contracted to crush the RAP. Cadillac Asphalt has its own screener on site to process the crushed RAP. No rejuvenating agent is used for the RAP.

A "blue smoke" filtration system was installed prior to the start of the 2012 paving season to control emissions from the silos. In addition, the truck loading area under the silos has been enclosed. These load out controls were required per Special Condition (SC) 4.3 of PTI 57-01B.

There are four heated tanks for storing liquid asphalt cement: three 30,000-gallon horizontal tanks and one 30,000-gallon vertical tank. RUO, when used as fuel, is stored in one 29,800-gallon vertical tank, and diesel fuel (for the loaders and yard trucks) is stored in one 1,000-gallon tank. These tanks are exempt from permitting per R.284(2)(d). The facility has the capability to use either natural gas or recycled used oil (RUO) for fuel but has only been using natural gas since July 2009 due to cost; the RUO tank has been empty for several years.

INSPECTION NOTES:

Upon arrival, I went to the control room and met with John Nance, Plant Operator, and announced the purpose of my visit. The facility was already done producing asphalt for the day. Mr. Nance said there have been no changes to the equipment in the past several years. The facility started production for the 2019 paving season on April 22, 2019. I performed a review of the records which are maintained on site. These include monthly/daily operating records, baghouse maintenance, carbon monoxide (CO) monitoring, and daily sweeping/spraying records. Other records are maintained off-site including invoices for sweeping/spraying, burner maintenance, and RAP crushing, and 12-month rolling production records. I concluded the investigation by walking around the lot to observe the aggregate and RAP storage piles and conveyor system. I did not observe any issues with fugitive dust or spillage at this time.

I contacted Sue Hanf on August 23, 2019, to obtain the records not maintained on site. These records were received via email on August 29, 2019.

Per the email from Ms. Hanf, Thompson Recycle was on site to perform RAP crushing seven times in 2017, four times in 2018, and once in 2019 (July 22, 2019).

APPLICABLE RULES/ PERMIT CONDITIONS:

Cadillac Asphalt – Dix operates under Permit to Install No. 57-01B, issued on September 30, 2008. This permit modified the previous permit, PTI No. 57-01A, by allowing the installation of a counter-flow drum and blue smoke filtration system and an increase in the allowable limit of sulfur in fuel. Cadillac Asphalt – Dix is also subject to 40 CFR Part 60 Subparts A and I. Requirements of Subparts A and I were written into the permit; therefore, compliance with the permit shows compliance with Subparts A and I.

Production and emission records from January 2017 through July 2019 were evaluated to determine compliance for this inspection.

Permit No. 57-01B, Special Conditions:

EUHMAPLANT: HMA facility, including conveyors, counter flow drum, and baghouse.

Condition	Pollutant	Permit Limit	Actual Emissions	Compliance Status
1.1a	PM	0.04 gr/dscf	0.013 gr/dscf[1]	COMPLIANCE
1.1b	PM	0.032 lb per ton	0.011 lb per ton[1]	COMPLIANCE
1.1c	PM	14.5 ton per 12-month	6.7 tons (Sept. 2018)[3]	COMPLIANCE
1.1d	CO	0.201 lb per ton	0.1079 lb per ton[1]	COMPLIANCE
1.1e	CO	89.9 tpy	26.2 tons (Oct. 2018)[3]	COMPLIANCE
1.1f	SO_2	0.168 lb per ton	0.003 lb per ton[1]	COMPLIANCE
1.1g	SO_2	75.5 tpy	0.7 tons (Oct. 2018)[3]	COMPLIANCE
1.1h	NO_x	0.18 lb per ton	Not Evaluated[4]	COMPLIANCE
1.1i	Lead	1.5×10^{-5} lb per ton	3.5×10^{-6} lb per ton[1]	COMPLIANCE
1.1j	Benzene	0.001 lb per ton	5.3×10^{-4} lb per ton[1]	COMPLIANCE
1.1k	Toluene	0.006 lb per ton	1.71×10^{-4} lb per ton[1]	COMPLIANCE
1.1l	Ethylbenzene	0.005 lb per ton	2.33×10^{-5} lb per ton[1]	COMPLIANCE
1.1m	Xylene	0.001 lb per ton	8.01×10^{-5} lb per ton[1]	COMPLIANCE
1.1n	Naphthalene	0.001 lb per ton	1.93×10^{-5} lb per ton[1]	COMPLIANCE
1.1o	Formaldehyde	0.01 lb per ton	0.001 lb per ton[2]	COMPLIANCE
1.1p	Acrolein	0.0008 lb per ton	0.0001 lb per ton[2]	COMPLIANCE
1.1q	Arsenic	1.5×10^{-6} lb per ton	1.67×10^{-7} lb per ton[1]	COMPLIANCE
1.1r	Nickel	1.5×10^{-4} lb per ton	3.12×10^{-6} lb per ton[1]	COMPLIANCE
1.1s	H_2SO_4	0.032 lb per ton	3.6×10^{-5} per ton[1]	COMPLIANCE
1.1t	Manganese	5.0×10^{-5} per ton	9.7×10^{-6} lb per ton[1]	COMPLIANCE
1.1u	Hydrogen Chloride	0.024 lb per ton	2.1×10^{-4} lb per ton[1]	COMPLIANCE

[1] Emission rates taken from results of stack testing performed on September 14-18, 2009.

[2] Emission rates taken from results of stack testing performed on August 19, 2010.

[3] Highest 12-month rolling emission total from January 2017 through July 2019.

[4] Due to the fact that NOx testing was not specified in PTI No. 57-01B and NOx emission rates at other asphalt facilities are well below the 0.18 lb per ton limit, AQD has not required Cadillac Asphalt to test for the NOx emission rate.

1.2: IN COMPLIANCE. Facility has only used natural gas as fuel in EUHMAPLANT during the compliance period.
1.3 and 1.4: IN COMPLIANCE. Facility has not used fuel oil in EUHMAPLANT since 2009.

1.5: IN COMPLIANCE. Per Mr. Nance, the facility does not use any asbestos-tailings or waste materials containing asbestos in EUHMAPLANT.
1.6: IN COMPLIANCE. The facility limits their asphalt mix to a maximum of 50% RAP based on a monthly average. A review of monthly production records shows that the facility generally uses an average RAP content ranging from 27-32%, with the highest monthly average being 31% in September 2018.
1.7: IN COMPLIANCE: Total asphalt production is below permitted limit of 895,000 tons of HMA per 12-month rolling time period. Highest 12-month rolling total during the compliance period was 403,018 tons in the 12-month period ending September 2018.
1.8: IN COMPLIANCE. The facility did not exceed the permit limit of 600 tons of HMA per hour (based on daily average) during the past two years. Daily production is usually in the range of 260-330 tons per hour.
1.9: IN COMPLIANCE. Facility maintains and implements the Fugitive Dust Plan as outlined in Appendix A of PTI No. 57-01B. See Fugitive Dust evaluation below for more details.
1.10: IN COMPLIANCE. Facility maintains and implements the Preventative Maintenance Program as outlined in Appendix B of PTI No. 57-01B. The baghouse is equipped with an alarm and production is automatically shut down if the temperature exceeds 400 ºF. Replacement bags are kept on site, and black light inspections are performed at least once each paving season. Records of all inspections and maintenance activities involving the baghouse are maintained. According to maintenance records, a black light test was performed on April 24, 2019, and six bags were replaced in the baghouse at that time.
1.11: IN COMPLIANCE. Facility maintains and implements the Startup, Shutdown, and Malfunction Plan as outlined in Appendix C of PTI No. 57-01B.
1.12: NOT EVALUATED. The facility has not used RUO since 2009.
1.13: IN COMPLIANCE. Facility maintains the efficiency of the drum burners, as required. Burner maintenance is performed by Combustion Services, Inc. at the start of each paving season and after 200 hours of operation during the paving season.
1.14: IN COMPLIANCE. The baghouse appears to be installed, maintained, and operated in a satisfactory manner. Baghouse pressure drop is checked frequently during mixing and recorded once per day. Based on a review of records, the pressure drop usually ranges from 2.5-3.5" wg, within the permit range of 2"-10" wg.
1.15: NOT EVALUATED. AQD has not requested testing for odor emissions.
1.16: IN COMPLIANCE. Testing for TAC emission rates was performed on September 14-18, 2009 and the results were submitted on November 16, 2009. Due to errors in the testing of acrolein and formaldehyde during that test, emission rates for those compounds were re-tested on August 19, 2010, and the results were received by AQD on October 18, 2010.
1.17: IN COMPLIANCE. Testing for CO emission rates was performed on September 14-18, 2009 and the results were received by AQD on November 16, 2009.
1.18: IN COMPLIANCE. Testing for PM emission rates was performed on September 14-18, 2009 and the results were received by AQD on November 16, 2009.
1.19: IN COMPLIANCE. Virgin aggregate feed rates and RAP feed rates are monitored on a continuous basis in the control room.
1.20: IN COMPLIANCE. CO monitoring is performed at the start of each paving season and after 200 hours of operation or malfunction, as required. A review of CO monitoring records showed no readings above 500 ppmv, the permit action level. In 2019, CO monitoring was performed on May 10, 2019 (270 ppmv) and again on July 10, 2019 (300 ppmv).
1.21: IN COMPLIANCE. Emissions and operating information are monitored, as required.
1.22: IN COMPLIANCE. Drum mix temperature and drum exhaust gas temperature are recorded on a continuous basis.
1.23: IN COMPLIANCE. All required calculations are completed in an acceptable format on a

monthly basis.
1.24: NOT EVALUATED. There have been no installation or modification of equipment requiring AQD notification since the previous inspection in September 2015.
1.25: IN COMPLIANCE. Emission and operating records are maintained, as required.
1.26: IN COMPLIANCE. The drum burners and baghouse are maintained and operated as required. Records of burner and baghouse inspections and maintenance are maintained and were reviewed during the inspection. These records include date of inspection/malfunction, findings, and any corrective actions taken.
1.27 and 1.28: IN COMPLIANCE. Production and material usage records are maintained, as required.
1.29: IN COMPLIANCE. TAC emissions are calculated in monthly and 12-month rolling formats, as required.
1.30: IN COMPLIANCE. CO emissions and monitoring data are maintained, as required.
1.31: IN COMPLIANCE. HCl emissions are calculated on a daily basis. Since the facility is not using RUO, HCl emissions are negligible.
1.32: IN COMPLIANCE. HMA production records are maintained on a daily, monthly, and 12-month rolling basis, as required.
1.33: IN COMPLIANCE. Stack dimensions appear to meet permit specifications.

EUYARD: Fugitive dust sources, including roadways, yard, material storage and handling operations

2.1: IN COMPLIANCE. A Fugitive Dust Plan is implemented and maintained for EUYARD, as specified in Appendix A of the permit.
2.2 and 2.3: IN COMPLIANCE. Fugitive dust emissions for EUYARD are calculated in a satisfactory manner using AP-42 emission factors and reported to AQD in the annual MAERS report. The facility reported approximately 4.5 tons of fugitive PM emissions from the aggregate handling, storage piles, and roadways in its 2018 MAERS.

EUACTANKS: Liquid asphalt cement tanks

3.1: IN COMPLIANCE. EUACTANKS are equipped with vapor condensation and recovery units.

EUSILOS: HMA paving material storage silos

4.1: IN COMPLIANCE. EUSILOS are equipped with fabric filters.
4.2 and 4.3: IN COMPLIANCE. Load out control for EUSILOS silos were installed prior to the 2012 paving season. Controls include a blue smoke filter system and enclosure for silo load out. Emissions from the load out enclosure are vented into the combustion chamber of the drum.

FGFACILITY: Includes all process equipment, including grandfathered and exempt equipment

5.1a: IN COMPLIANCE. No individual HAP exceeded 9.0 tons per year based on a 12-month rolling time period. The highest emitting HAP of concern is formaldehyde; the highest formaldehyde emissions during the compliance period was 0.63 tons for the 12-month rolling time period ending September 2018.
5.1b: IN COMPLIANCE. Aggregate HAP emissions did not exceed 22.5 tons per year based on a 12-month rolling time period. The highest aggregate HAP emissions was 0.88 tons for the 12-month rolling time period ending September 2018.
5.2 and 5.3: IN COMPLIANCE. All emission calculations, including HAPs, are calculated and

maintained as required.

Fugitive Dust Control Plan (PTI No. 57-01B, Appendix A): For compliance purposes, compliance with the Fugitive Dust Plan in PTI No. 57-01B is considered to sufficiently demonstrate compliance with SIP No. 5-1993 since it is specific to this facility and covers the basic parts of the SIP:

1. Site Maintenance:
A. Sweeping is performed daily using a wet sweeper. Unpaved areas treated as needed using calcium chloride; calcium chloride was applied five times in 2019, most recently on August 9, 2019. There were no fugitive dust issues observed during the inspection.
B. Speed limit signs are posted.
C. Drop heights are minimized.
D. No issues with fugitive dust were observed from the stockpiles during the inspection.

2. Management of On-Site Roadways:
A. Roadways leading to the silos are paved, as required.
B. Paved roads are swept daily using a wet sweeper. No fugitive dust or track out issues were observed during the inspection.
C. Dust suppressant was applied on unpaved areas by Kleenway five times in 2019: May 15, June 18, July 1, July 11, and August 9.
D. Spillage is removed on a daily basis.

3. On-Site Management of Haul Vehicles:
A. Incoming aggregate trucks are tarped.
B. Trucks are required to cover their loads before leaving.

4. Management of Front-End Loader Operations:
Loaders were not in operation during the inspection.

5. Recordkeeping:
Fugitive dust records were maintained and reviewed during the inspection.

6. Fugitive Emissions from Process Equipment and Baghouse:
Fugitive emissions were not observed from the process equipment or the baghouse.

Preventative Maintenance Program for the Baghouse (PTI No. 57-01B, Appendix B):

1. Baghouse Operation and Pressure Drop:
a. Pressure drop is continuously monitored during asphalt production.
b. Pressure drop is recorded once per day.

2. Baghouse/Plant Alarm System:
Sensor and alarm are installed. Baghouse automatically shuts down system at 400 °F.

3. Handling and Storage of Baghouse Dust:
Baghouse dust is put back into the dryer via a screw conveyor.

4. Piping and Seals Maintenance:
Piping and seals are replaced as needed.

5. Visible Emissions and Actions to be taken in the Event of:
Visible emissions were not detected at the time of the inspection.

6. Black Light Inspections:
A black light inspection is performed at least once per year at the start of the paving season. Black light inspections were performed on April 23, 2017, April 18, 2018, and April 24, 2019.

7. Inventory of Filter Bags:
An inventory of filer bags is maintained and 150 spare bags are kept on site.

8. Baghouse Inspection Record:
A record all inspections and maintenance activities performed on the baghouse is maintained on-site.

Startup, Shutdown, and Malfunction Abatement Plan (PTI No. 57-01B, Appendix C):

Facility maintains and implements an emission abatement plan during startup, shutdown, and malfunctions. All required inspections and maintenance activities are performed and recorded

Compliance Monitoring Plan for RUO (PTI No. 301-98B, Appendix D):

The facility has not used RUO since 2009, so Appendix D was not evaluated during this inspection.

FINAL COMPLIANCE DETERMINATION:

At the time of inspection, Cadillac Asphalt – Dix Division was determined to be in substantial compliance with PTI No. 57-01B, SIP No. 5-1993, and other applicable State and federal air rules.

NAME _____ DATE 9-11-19 SUPERVISOR JK