

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

B319530917

FACILITY: CADILLAC ASPHALT PRODUCTS		SRN / ID: B3195
LOCATION: 670 S DIX AVE, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Rob Liddell, Division Manager		ACTIVITY DATE: 08/26/2015
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance inspection, FY 2015		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, MDEQ-AQD  
 PERSONNEL PRESENT: John Nance, Plant Operator  
 FACILITY PHONE NUMBER: (313) 849-9374  
 FACILITY FAX NUMBER: (313) 849-9480  
 FACILITY CONTACT: Rob Liddell, (313) 332-8306, rliddell@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 – 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 week (5:30 AM to 5:30 PM). There are currently 6 employees on site.

### COMPLAINT/COMPLIANCE HISTORY:

Facility was determined to be in compliance during the last inspection on September 29, 2012. No Violation Notices have been issued since that time and no complaints have been received.

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 and is permitted to produce up to 600 tons of hot mix asphalt (HMA) per hour. Cadillac Asphalt is currently producing about twelve different formulations of hot mix asphalt. 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 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. Presently, Thompson Recycle is contracted to crush the RAP several times per year using a portable crusher. 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 the silos. In addition, the truck loading area under the silos has been enclosed. These load out controls were required per Special Condition 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. Liquid asphalt is not considered to be a carcinogen and has a very low vapor pressure (< 0.01 mm Hg), so the tanks are exempt from permitting per R.284(i). RUO, when used as fuel, is stored in one 29,800 gallon vertical tank, and diesel fuel (for the front end loaders and yard trucks) is stored in one 1,000 gallon tank. These tanks are exempt from permitting per R.284(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.

#### **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 producing HMA at the time, so I noted the parameters of the current mix:

Mix: 13A  
Production Rate: 316 tph  
RAP: 42.1%  
Liquid Asphalt Cement: 16.6 tph  
Moisture Content: 5.0%  
Baghouse Pressure Drop: 2.6"wg  
Drum Mix Temp: 318 °F  
Baghouse Inlet Temp: 373 °F  
Baghouse Exhaust Temp: 311 °F  
Burner Position: 37% open  
Exhaust Fan Damper Position: 46% open

I then performed a review of the records which are maintained on site. These include monthly/daily operating records, baghouse maintenance, CO monitoring, and daily sweeping/spraying records. Some records are kept at the Cadillac Asphalt's Rawsonville site. These include invoices for sweeping/spraying, burner maintenance, and RAP crushing, and 12-month rolling production records. Mr. Nance said I should contact Rob Liddell for these records and provided his contact information. 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 Rob Liddell to obtain additional records. These records were received via email from Sue Hanf on September 14, 2015.

Per the email from Ms. Hanf, Thompson Recycle was on site to perform RAP crushing four times in 2013, six times in 2014, and four times in 2015, most recently from August 28 through September 1, 2015.

#### **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.

For the purpose of this inspection, production and emission records from September 2012 through August 2015 were evaluated to determine compliance. Copies of these records can be found in the orange facility file.

Permit # 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 <sup>1</sup>	IN COMPLIANCE
1.1b	PM	0.032 lb per ton	0.011 lb per ton <sup>1</sup>	IN COMPLIANCE
1.1c	PM	14.5 ton per 12-month	5.3 tons (April 2013) <sup>3</sup>	IN COMPLIANCE
1.1d	CO	0.201 lb per ton	0.1079 lb per ton <sup>1</sup>	IN COMPLIANCE
1.1e	CO	89.9 tpy	20.8 tons (April 2013) <sup>3</sup>	IN COMPLIANCE
1.1f	SO <sub>2</sub>	0.168 lb per ton	0.003 lb per ton <sup>1</sup>	IN COMPLIANCE
1.1g	SO <sub>2</sub>	75.5 tpy	0.5 tons (August 2015) <sup>3</sup>	IN COMPLIANCE
1.1h	NO <sub>x</sub>	0.18 lb per ton	Not Evaluated <sup>4</sup>	IN COMPLIANCE
1.1i	Lead	1.5 x 10 <sup>-5</sup> lb per ton	3.5 x 10 <sup>-6</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1j	Benzene	0.001 lb per ton	5.3 x 10 <sup>-4</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1k	Toluene	0.006 lb per ton	1.71 x 10 <sup>-4</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1l	Ethylbenzene	0.005 lb per ton	2.33 x 10 <sup>-5</sup> per ton <sup>1</sup>	IN COMPLIANCE
1.1m	Xylene	0.001 lb per ton	8.01 x 10 <sup>-5</sup> per ton <sup>1</sup>	IN COMPLIANCE
1.1n	Naphthalene	0.001 lb per ton	1.93 x 10 <sup>-5</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1o	Formaldehyde	0.01 lb per ton	0.001 per ton <sup>2</sup>	IN COMPLIANCE
1.1p	Acrolein	0.0008 lb per ton	0.0001 lb per ton <sup>2</sup>	IN COMPLIANCE
1.1q	Arsenic	1.5 x 10 <sup>-6</sup> lb per ton	1.67 x 10 <sup>-7</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1r	Nickel	1.5 x 10 <sup>-4</sup> lb per ton	3.12 x 10 <sup>-6</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1s	H <sub>2</sub> SO <sub>4</sub>	0.032 lb per ton	3.6 x 10 <sup>-5</sup> per ton <sup>1</sup>	IN COMPLIANCE
1.1t	Manganese	5.0 x 10 <sup>-5</sup> per ton	9.7 x 10 <sup>-6</sup> lb per ton <sup>1</sup>	IN COMPLIANCE
1.1u	Hydrogen Chloride	0.024 lb per ton	2.1 x 10 <sup>-4</sup> lb per ton <sup>1</sup>	IN COMPLIANCE

<sup>1</sup> Emission rates taken from results of stack testing performed on September 14-18, 2009.

<sup>2</sup> Emission rates taken from results of stack testing performed on August 19, 2010.

<sup>3</sup> Highest 12-month rolling emission total from September 2012 through August 2015.

<sup>4</sup> 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 is not requiring Cadillac Asphalt to test for the NOx emission rate at this time. AQD may request NOx testing at a later date. See email from Jon Lamb to David Yanochko (consultant, FTC&H) dated February 16, 2011.

1.2: IN COMPLIANCE. Facility has only used natural gas as fuel for the past two years.

1.3 and 1.4: IN COMPLIANCE. Facility has not used virgin fuel oil nor RUO the past two years.

1.5: IN COMPLIANCE. The facility does not use any asbestos-containing materials 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 20-45%, with the highest monthly average being 43.5% in April 2014. The average RAP % for August 2015 was 41.4%.

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 in last two years was 350,119 tons in November 2012. The 12-month rolling total as of August 2015 was 307,820 tons.

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 300-350 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 compliance status 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 shutdown if the temperature exceeds 400 °F. 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 records, all bags were replaced in the baghouse prior to the start of the 2015 paving season.

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: IN COMPLIANCE. The facility maintains and implements the Compliance Monitoring Plan for RUO as outlined in Appendix D of PTI No. 57-01B, when using RUO.

1.13: IN COMPLIANCE. Facility maintains the efficiency of the drum burners, as required. Burner maintenance is performed by Combustion Services at the start of each paving season, then during the year as needed.

1.14: IN COMPLIANCE. The baghouse appears to be installed, maintained, and operated in a satisfactory manner. During the inspection, the baghouse pressure drop was 2.6" wg, within the permit range of 2" to 10" wg.

1.15: NOT EVALUATED. AQD has not requested testing for odor emissions at this time.

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 submitted on October 18, 2010.

1.17: IN COMPLIANCE. Testing for CO emission rates was performed on September 14-18, 2009 and the results were submitted on November 16, 2009.

1.18: IN COMPLIANCE. Testing for PM emission rates was performed on September 14-18, 2009 and the results were submitted on November 16, 2009.

1.19: IN COMPLIANCE. Virgin aggregate feed rates and RAP feed rates are monitored on a continuous basis.

1.20: IN COMPLIANCE. CO monitoring is performed and recorded as required. A review of CO monitoring records show no readings above 500 ppmv, the permit action level. The most recent CO monitoring was performed on August 7, 2015, and showed a CO level of 309 ppmv.

1.21: IN COMPLIANCE. Emission rates 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: IN COMPLIANCE. All notifications are sent to AQD, as required.

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. 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.

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 and reported to AQD as part of 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 under the silos.

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; formaldehyde emissions did not exceed 0.6 tons during any 12-month rolling time period from September 2012 through August 2015.

5.1b: IN COMPLIANCE. Aggregate HAP emissions did not exceed 22.5 tons per year based on a 12-month rolling time period. Aggregate HAP emissions did not exceed 0.7 tons during any 12-month rolling time period from September 2012 through August 2015.

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 will be considered show 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 weekly, at a minimum, using a wet sweeper and unpaved areas treated as needed using calcium chloride. There were no fugitive dust issues observed during the inspection.
- B. Speed limit signs are posted.
- C. Drop heights are minimized.
- D. Stockpiles were very dry and emitting fugitive dust.

2. Management of On-Site Roadways:

- A. Roadways leading to the silos are paved, as required.
- B. Paved roads are swept weekly using a wet sweeper. Track-out not a problem at the time of inspection.
- C. Dust suppressant was applied on unpaved areas by Kleenway on May 19, June 25, and August 8.
- 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. Pressure drop was 3.3" wg at the time of inspection.
- B. Pressure drop is recorded daily.

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

