

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

B312035264

FACILITY: AJAX MATERIALS CORPORATION		SRN / ID: B3120
LOCATION: 8744 INKSTER ROAD, ROMULUS		DISTRICT: Detroit
CITY: ROMULUS		COUNTY: WAYNE
CONTACT: Mark Boden , Vice President		ACTIVITY DATE: 06/29/2016
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Non Compliance	
SUBJECT: Scheduled inspection, FY 2016		SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, AQD-Detroit Office  
PERSONNEL PRESENT: Kathleen Anderson, consultant; Jason Reaume, Plant Manager; Dave Grabowski, Plant Operator  
FACILITY PHONE NUMBER: (734) 946-8080, ext. 3  
FACILITY WEBSITE: www.ajaxpaving.com

**FACILITY BACKGROUND:**

Ajax Paving Industries, founded in 1951, is based in Troy, Michigan, and has asphalt facilities in Michigan and Florida. Plant 5, located in Romulus, Michigan, produces paving-grade hot mix asphalt; per the company's website, it is the company's highest-producing asphalt facility. Plant 5 is located on an 18-acre property close to I-94 and Detroit Metro Airport. The area is mostly light industrial, though there are some nearby homes on the east side of Inkster Road. The facility is seasonal; depending on the weather, the paving season usually starts in late April/early May and runs through late November/early December. Normal operating hours are 3:00 a.m. to 5:00 p.m., Monday through Sunday, and there are six employees on-site.

Note: Most production records are sent daily to the corporate office and are not kept on site. The contact at the corporate office is Mark Boden, (248-398-2300) or Dave Grabowski (248-388-1670). Records were provided by their consultant, Kathleen Anderson (kanderson@ajaxpaving.com; 248-244-3300).

**COMPLAINT/COMPLIANCE HISTORY:**

Facility was found to be in compliance during the last inspection in September 2014. There have been no citizen complaints received since the last inspection. There are no outstanding consent orders.

On November 11, 2015, USEPA Region 5 staff, Cynthia Schafer and Virginia Galinky, performed opacity readings of the baghouse stack at Ajax after observing emissions coming from the baghouse stack. USEPA performed the readings using alternate Method 82, which uses a camera to read opacity as an alternate to Method 9. The readings showed a 6-minute average opacity of 45%. The Method 82 readings were forwarded to AQD via email on November 23, 2015. On February 11, 2016, USEPA issued a Section 114 Request to Ajax Materials Corporation, requiring the company to submit records and perform testing for PM emissions and Method 9 Visible Emission readings at the Romulus facility. Testing was performed on June 29, 2016, on the date of this inspection.

**PROCESS DESCRIPTION AND EQUIPMENT:**

Ajax produces a variety of formulations of hot mix asphalt (HMA), using various types/proportions of aggregate, recycled asphalt product (RAP), and liquid asphalt based on customer specifications. Recycled shingles and/or slag may also be used in some formulations. In addition, the facility has the capability to produce warm mix asphalt (WMA), though most production remains HMA. Formulations vary depending on the intended use of the asphalt: a base mix uses a courser aggregate while a surface mix will contain more fines to produce a smoother driving surface. Currently, the main customers are MDOT, Detroit Metro Airport, independent contractors, and Ajax's own paving operations.

Asphalt production is performed on a batch basis, with each batch made for a specific customer that day. The facility generally does about 4-7 different "mixes" per day. To start the process, various types 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, to make sure the aggregate has the correct size and tonnage for the mix. The aggregate is then fed into the front end of the drum dryer, which sends the mix and exhaust gases

towards the silos and baghouse; Ajax uses a counter-flow Gencor dryer with a 700 ton/hour capacity, which was installed in March 2008. The drum dryer and baghouse are identified in the permit as EUHMAPLANT.

RAP is then fed into the mixer at mid-drum, downstream of the burner. Liquid asphalt, which is stored in heated tanks, is then metered into the lower half of the drum, following the addition of RAP. There are five 30,000-gallon vertical liquid asphalt tanks (EUACTANKS).

The finished hot mix asphalt is discharged from the mixer onto a slat conveyor. This conveyor elevates the hot mix asphalt to the top of one of eight 300-ton storage silos (EUSILOS), where the mix is stored for truck loading and transport to the job site. HMA mix is generally not stored in the silos for more than 24 hours; if the mix stays in the silo too long, it will start to solidify.

The facility is permitted to use both natural gas and recycled used oil (RUO) for fuel, but has only used natural gas the past several years.

There are various tanks and equipment which are exempt from permitting requirements:

- Two 1,000-gallon horizontal diesel tanks: Tanks are painted green and are used for off-road and on-road fueling. Tanks are exempt per Rule 284(d).
- One 500-gallon horizontal waste oil tank: Tank is painted green. Waste oil is held for disposal, not used for fuel. Tank is exempt per Rule 284(i).
- One 30,000-gallon vertical RUO tank: Tank is empty since RUO is currently not used. Tank is exempt per Rule 284(d).
- One 10,000-gallon vertical tack asphalt tank: Tack is an asphalt by-product used during road resurfacing to improve bonding. Tank is exempt per Rule 284(i).
- One horizontal calibration tank: A small tank (less than 1000 gallons) used to mix and test the liquid asphalt cement before use. Liquid asphalt is not listed as a carcinogen and has a low vapor pressure (<0.01 mm Hg), so the tanks are exempt per Rule 284(i).
- One AC Heater tank: This unit is filled with oil which is heated and recirculated through the linings of the liquid asphalt tanks to provide indirect heating for those tanks. This unit is exempt per Rule 284(c).

The warm mix asphalt system, manufactured by AquaFoam, uses a water-based foaming agent, which has been determined by AQD to be exempt per R.285(b). For the purposes of emission calculations, the company assumes all asphalt production to be hot mix asphalt, which has higher emissions due to higher production temperature and fuel usage, so this conservative approach is acceptable when accounting for emissions from warm mix asphalt production. Mr. Reaume said the facility had not done any WMA production this paving season. WMA is usually produced in small batches and used for hand patching of roads.

### **PROCESS CONTROLS:**

All drum emissions are sent through a 1,520-bag, reverse-air baghouse to control particulate emissions before being discharged to the ambient air through a stack. Baghouse fines are conveyed via screw auger back to the drum as aggregate, so there is no disposal needed for the baghouse fines.

Controls were installed for the silo load out area and top of the silos prior to the start of the 2009 paving season. The silo load out control consists of collection hoods at both ends of the loading area under the silos, which are routed to a baghouse and short stack. Emissions from the top of the silos are controlled by a condensation canister system which collects the emissions and routes them back into the silos.

The liquid asphalt cement tanks are controlled with a vapor condensation and recovery system.

Fugitive dust emissions are controlled by sweeping and by spraying stock piles and roadways with water or calcium chloride, as necessary.

### **INSPECTION NOTES:**

Ajax was performing PM and opacity testing of the baghouse stack on the date of the inspection, so I arrived at the facility at 7:30 AM prior to the start of testing and met with Kathleen Anderson, the environmental consultant for Ajax. Testing was performed by Derenzo Environmental Services (Derenzo staff consisted of Tyler Wilson, Blake Beddow, and Clay Gaffey; Mr. Beddow performed the Method 9 readings). Mark Dziadosz, AQD-TPU, was also on site to observe the testing. Testing appeared to go smoothly for all three test runs. AQD staff did not

perform Method 9 readings; however, during the third test run, I observed what appeared to be a detached particulate plume from the baghouse stack, which was continuous throughout the run. I notified Mr. Beddow of my observations. Mr. Beddow believed the plume to be steam and read the opacity as 0%, though he noted my observations on the Method 9 form. While I did not perform Method 9 readings, I would have estimated the opacity to be in the range of 5%-15%, below the allowable limit of 20%.

Also during the inspection, I observed particulate emissions coming from both the truck load-out area and from the top of the silos. I informed Ms. Anderson and Mr. Grabowski of my observations. Upon closer examination, the truck load out collection hood did not appear to have sufficient draw, allowing emissions to leave the load-out area.

For the inspection, I met with Jason Reaume, Plant Manager, and Dave Grabowki, Operations Manager, in the control room. I took the following readings of the mix being produced during Run 1:

Production Rate: 481 tph  
Liquid Asphalt: 13.1 tph  
RAP: 33%  
Drum temp.: 322 F  
Baghouse Inlet temp: 255 F  
Baghouse Outlet temp.: 214 F  
Burner position: 56%  
Baghouse Pressure Drop: 3.0" wg

The facility started 2016 production on April 12, 2016. At the time of inspection, the plant had operated for approximately 356 hours during the 2016 paving season.

CO monitoring is performed at the start of each paving season and after 500 hours of operation during the paving season. If CO readings are above 500 ppm, the facility will have the burners tuned up. CO readings below 500 ppm indicate proper operation of the burners.

CO monitoring was performed on the following dates in 2015 and 2016:

April 11, 2015: start-up, 129-151 ppm CO  
July 28, 2015: 500 hours, 242-360 ppm CO  
April 27, 2016: start-up, 351-397 ppm CO

Burner tuning was performed on June 4, 2016, by Combustion Services. No adjustments were needed at this time.

RAP is produced by crushing asphalt-containing debris, mainly old roads, which is performed on site at Plant 5 by a portable crusher. Based on records from July 2014 through June 2016, RAP crushing was performed on site by Rock Recyclers, Hazmag, and Terex on the following dates (with the total tons of RAP produced in parenthesis):

Rock Recyclers: July 18 – July 26, 2014 (23,274 tons)  
Rock Recyclers: August 15 – September 10, 2014 (38,177 tons)  
Rock Recyclers: September 26 – September 30, 2014 (12,368 tons)  
Rock Recyclers: October 8 – November 7, 2014 (49,747 tons)  
Rock Recyclers: December 12, 2014 – January 5, 2016 (9,481 tons)  
Hazmag: August 14 – August 24, 2015 (12,583 tons)  
Rock Recyclers: August 24 – August 30, 2015 (16,329 tons)  
Terex: September 23 – October 13, 2015 (17,872 tons)  
Rock Recyclers: October 22 – November 6, 2015 (32,719 tons)  
Rock Recyclers: February 3 – February 17, 2016 (18,272 tons)  
Rock Recyclers: April 15 – May 6, 2016 (41,352 tons)  
Hazmag: May 31 – June 20, 2016 (30,668 tons)

AQD did not receive relocation notices from these companies prior to these dates of operation.

#### **APPLICABLE RULES/ PERMIT CONDITIONS:**

Ajax Plant 5 is a synthetic minor source operating under PTI No. 310-06B, issued on June 12, 2008.

In determining compliance status at the time of this inspection, production and emission records from July 2014 through June 2016 were reviewed. Some records were reviewed on site, including baghouse maintenance, CO monitoring, and fugitive dust control records. Emission and production records were submitted by Ms. Anderson on August 9, 2016. Copies of all records obtained during the inspection can be found in the orange facility file.

Results of the PM emission and opacity testing were reported to AQD on July 26, 2016, and showed the facility to be in compliance with the permitted PM emission rate and opacity limit. The test report can be found in the orange facility file.

PTI No. 310-06B, Special Conditions:

EUHMAPLANT

	Pollutant	Limit <sup>1</sup>	Actual	Compliance Status	Testing Date
1.1a	PM	0.04 gr/dscf	0.002 gr/dscf	In Compliance	June 29, 2016
1.1b	PM	0.04 lb per ton <sup>1</sup>	0.002 lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1c	CO	0.201 lb per ton <sup>1</sup>	0.123 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1d	CO	89.9 tpy	33.2 tons	In Compliance	June 2014 - May 2015
1.1e	SO <sub>2</sub>	0.169 lb per ton <sup>1</sup>	0.002 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1f	SO <sub>2</sub>	75.6 tpy	0.54 tons	In Compliance	June 2014 - May 2015
1.1g	NO <sub>x</sub>	0.12 lb per ton <sup>1</sup>	Not Evaluated	See note below <sup>2</sup>	NA
1.1h	Lead	1.5×10 <sup>-5</sup> lb per ton <sup>1</sup>	7.75×10 <sup>-7</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1i	Benzene	0.0009 lb per ton <sup>1</sup>	0.00056 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1j	Toluene	0.006 lb per ton <sup>1</sup>	0.00025 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1k	Ethylbenzene	0.005 lb per ton <sup>1</sup>	0.00007 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1l	Xylene	0.001 lb per ton <sup>1</sup>	0.00011 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1m	Naphthalene	0.001 lb per ton <sup>1</sup>	0.00006 lb per ton <sup>1</sup>	In Compliance	Oct. 28, 2008
1.1n	Formaldehyde	0.007 lb per ton <sup>1</sup>	0.00144 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1o	Acrolein	0.0008 lb per ton <sup>1</sup>	0.000255 lb per ton <sup>1</sup>	In Compliance	Oct. 28-29, 2008
1.1p	Arsenic	1.5×10 <sup>-6</sup> lb per ton <sup>1</sup>	7.16×10 <sup>-8</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1q	Nickel	1.5×10 <sup>-4</sup> lb per ton <sup>1</sup>	4.56×10 <sup>-7</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1r	H <sub>2</sub> SO <sub>4</sub>	0.015 lb per ton <sup>1</sup>	0.00040 lb per ton <sup>1</sup>	In Compliance	Aug. 13, 2008
1.1s	Manganese	5.0×10 <sup>-5</sup> lb per ton <sup>1</sup>	2.03×10 <sup>-6</sup> lb per ton <sup>1</sup>	In Compliance	Aug. 12, 2008
1.1t	HCl	0.024 lb per ton <sup>1</sup>	0.000098 lb per ton <sup>1</sup>	In Compliance	Aug. 12-13, 2008

<sup>1</sup> Pound pollutant per ton of HMA paving material produced.  
<sup>2</sup> NO<sub>x</sub> testing not required at this time. NO<sub>x</sub> emission testing was not specifically required in the permit conditions and based on a review of NO<sub>x</sub> emissions tests at other asphalt plants, AQD believes that NO<sub>x</sub> emissions should be below permit limits. AQD withholds the right to require the facility to perform NO<sub>x</sub> testing at a later date.

- 1.2: In compliance. Facility is only burning natural gas in EUHMAPLANT at this time.
- 1.3 and 1.4: Not evaluated. Facility is not currently using fuel oil or RUO in EUHMAPLANT.
- 1.5: In compliance. Facility does not use any asbestos-containing material in its HMA production.
- 1.6: In compliance. Facility did not exceed 50% RAP material in the asphalt mix, based on a monthly average.

The highest monthly average RAP % was 44% in April 2016. Monthly average RAP% was under 40% for all other months reviewed from July 2014 through June 2016, with an average RAP% of 37% for June 2016.

1.7: In compliance. HMA production is well below the permit limit of 895,000 tons per 12-month rolling time period. The highest 12-month rolling total was 539,015 tons of HMA in the 12-month rolling time period ending May 31, 2015. Total HMA production in the 12-month rolling time period ending June 30, 2016, was 511,005 tons.

1.8: In compliance. Facility did not exceed the permitted limit of 700 tph, based on a daily average. The highest daily average was 513 tph on August 1, 2015. The average on the date of the inspection/testing (June 29, 2016) was 494 tph.

1.9: In compliance. Fugitive Dust Control Plan is implemented and maintained, as required.

1.10: In compliance. Preventative Maintenance Program is implemented and maintained, as required.

1.11: In compliance. Emission Abatement Plan for Start-Up, Shutdown, and Malfunction is implemented and maintained, as required.

1.12: In compliance. Facility has a Compliance Monitoring Plan for RUO, though RUO is not currently being used.

1.13: In compliance. Combustion Services was on-site to fine tune the burners on June 4, 2016, several weeks after the start of the paving season. However, CO monitoring performed at the start of the paving season showed normal efficiency of the burner, and Combustion Services did not need to make adjustments when on site.

1.14: In compliance. The baghouse is installed, operated, and maintained in a satisfactory manner. Facility maintained the proper maintenance and inspection records, in accordance with the Preventative Maintenance Plan.

1.15: In compliance. Odor testing was performed. Air samples were collected during the August 12, 2008, emissions testing and then sent to Odor Science & Engineering for evaluation via an odor panel (per ASTM Method E-679-91) and reported on February 5, 2009.

1.16: In compliance. Testing of TAC emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.

1.17: In compliance. Testing of CO and SO<sub>2</sub> emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.

1.18: In compliance. Testing of particulate emission rates was performed on August 12-13 and October 28-29, 2008. Results were reported on February 5, 2009.

1.19: In compliance. Virgin aggregate and RAP feed rates are monitored on a continuous basis.

1.20: In compliance. CO monitoring was performed upon at the start of the paving season and after every 500 hours of operation in 2015 and 2016, as required.

1.21: In compliance. Records are maintained in a format acceptable to AQD and were provided upon request.

1.22: In compliance. Proper notification regarding construction and modification has been made to AQD.

1.23: In compliance. Records are maintained per 40 CFR Part 60 Subparts A and I, as required.

1.24: In compliance. Maintenance of the mixer/burner and baghouse is performed on a routine basis and as needed. Records of all maintenance activities are maintained on site.

1.25: In compliance. Facility keeps track of total HMA produced, including average RAP per ton of HMA produced, on a monthly basis. Facility does not use fuel oils, but does maintain records of natural gas usage.

1.26: In compliance. Facility keeps intermittent daily records of virgin aggregate feed rate, RAP feed rate, temperature, and mix identification data, as required.

1.27: In compliance. All required daily, monthly, and 12-month rolling emission calculation records for criteria pollutants and TACs are maintained in a format acceptable to AQD.

1.28: In compliance. Records of CO monitoring are maintained, as required.

1.29: In compliance. Records of daily, monthly, and 12-month rolling HMA production are maintained, as required.

1.30: In compliance. Stack appears to meet the maximum diameter and minimum height requirements.

## EUYARD

2.1: In compliance. A fugitive dust plan is implemented and maintained. During the site inspection, there were no fugitive dust issues observed.

2.2: Not evaluated. Monthly fugitive dust emission calculations are not required.

2.3: In compliance. Fugitive dust emissions are calculated on an annual basis and submitted in the MAERS report.

## EUACTANKS

3.1: In compliance. The vapor condensation and recovery system for the asphalt cement tanks is installed,

