

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION**

December 28, 2018

**PERMIT TO INSTALL**  
989-84D

**ISSUED TO**  
Cadillac Asphalt, LLC Shelby Plant

**LOCATED AT**  
12345 23 Mile Road  
Shelby Township, Michigan

**IN THE COUNTY OF**  
Macomb

**STATE REGISTRATION NUMBER**  
N0989

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>September 19, 2018</b>	
DATE PERMIT TO INSTALL APPROVED: <b>December 28, 2018</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

**PERMIT TO INSTALL**  
**Table of Contents**

<b>Section</b>	<b>Page</b>
Alphabetical Listing of Common Abbreviations / Acronyms .....	2
General Conditions .....	3
Special Conditions .....	5
Emission Unit Summary Table.....	5
Special Conditions for EUHMAPLANT .....	6
Special Conditions for EUYARD .....	11
Special Conditions for EUACTANKS .....	13
Special Conditions for EUSILOS.....	14
Flexible Group Summary Table .....	16
Special Conditions for FGFACILITY .....	17
Appendix A: Fugitive Dust Control Plan .....	19
Appendix B: Preventative Maintenance Program for the Fabric Filter Dust Collector .....	20
Appendix C: Emission Abatement Plan For Startup, Shutdown And Malfunctions .....	22

**Common Abbreviations / Acronyms**

<b>Common Acronyms</b>		<b>Pollutant / Measurement Abbreviations</b>	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO <sub>2</sub> e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H <sub>2</sub> S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO <sub>x</sub>	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO <sub>2</sub>	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

\* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUHWMAPLANT	Hot Mix Asphalt (HMA) facility including: Aggregate conveyors, 500 tph GenCor Model STD 500 counter flow dryer-mixer, fabric filter dust collector.	1984	FGFACILITY
EUYARD	Fugitive dust sources including: Plant roadways, Plant yard, Material storage piles, Material handling operations (excluding cold feed aggregate bins)	1984	FGFACILITY
EUACTANKS	Liquid asphalt cement storage tanks	1984	FGFACILITY
EUSILOS	Hot Mix Asphalt (HMA) paving material product storage silos	1984	FGFACILITY
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.			

**The following conditions apply to: EUHWMAPLANT**

**DESCRIPTION:** Hot Mix Asphalt (HWA) facility including: Aggregate conveyors, 500 tph GenCor Model STD 500 counter flow dryer-mixer. The emission unit is permitted to process Recycled Asphalt Pavement (RAP) and Recycled Asphalt Shingles (RAS).

**Flexible Group ID:** FGFACILITY

**POLLUTION CONTROL EQUIPMENT:** High Temperature Fabric Filter

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.04 gr/dscf	Test Protocol <sup>f</sup>	EUHWMAPLANT	SC V.3, SC VI.4, SC VI.5	40 CFR 60, Subparts A & I
2. PM	0.033 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	SC V.3, SC VI.5, SC VI.8, SC VI.10	R 336.1205(1)(a), R 336.1205(3)
3. CO	0.180 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	SC V.2, SC VI.3, SC VI.9, SC VI.10	R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1702
4. CO	89.9 tpy <sup>a</sup>	12-month rolling time period as determined at the end of each calendar month	EUHWMAPLANT	SC VI.8, SC VI.10	R 336.1205(1)(a), R 336.1205(3)
5. SO <sub>2</sub>	0.010 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	SC VI.6, SC VI.10	R 336.1205(1)(a), R 336.1205(3)
6. NO <sub>x</sub>	0.080 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	SC VI.8, SC VI.10	R 336.1205(1)(a), R 336.1205(3)
7. Lead	2.0x10 <sup>-6</sup> lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1225
8. Benzene	0.003 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
9. Toluene	0.006 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
10. Ethylbenzene	0.003 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
11. Xylene	0.003 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
12. Naphthalene	0.001 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
13. Formaldehyde	0.01 lb per ton <sup>b</sup>	Test Protocol <sup>f</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
14. Acrolein	0.001 lb per ton <sup>b</sup>	Test Protocol <sup>*</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
15. Arsenic	1.0×10 <sup>-6</sup> lb per ton <sup>b</sup>	Test Protocol <sup>*</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
16. Nickel	1.0×10 <sup>-4</sup> lb per ton <sup>b</sup>	Test Protocol <sup>*</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
17. H <sub>2</sub> SO <sub>4</sub>	0.0032 lb/ton	Test Protocol <sup>*</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225
18. Manganese	5.0×10 <sup>-5</sup> lb per ton <sup>b</sup>	Test Protocol <sup>*</sup>	EUHWMAPLANT	GC 13, SC VI.10	R 336.1224, R 336.1225

<sup>a</sup> Annual limits based on total 895,000 tons HWMA paving material production.

<sup>b</sup> Pound pollutant per ton of HWMA paving material produced.

<sup>\*</sup> Test Protocol shall specify averaging time.

## II. MATERIAL LIMITS

1. The permittee shall not burn any fuel other than natural gas in EUHWMAPLANT. **(R 336.1224, R 336.1225, R 336.1702)**
2. The permittee shall not use any asbestos tailings or waste materials containing asbestos in EUHWMAPLANT pursuant to the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61 Subpart M. **(R 336.1225, 40 CFR Part 61 Subparts A & M)**
3. The permittee shall limit the asphalt mixture process in EUHWMAPLANT to a maximum of 50 percent mass of combined RAP and RAS based on a monthly average. **(R 336.1224, R 336.1225, R 336.1702)**
4. The permittee shall not process more than 1,000,000 tons of total HWMA paving materials in EUHWMAPLANT per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a), R 336.1205(3))**
5. The permittee shall not process more than 500 tons of total HWMA paving materials in EUHWMAPLANT per hour based on a daily average, which shall be determined by dividing the daily HWMA production by the daily hours of production. **(R 336.1224, R 336.1225, R 336.1702)**

## III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EUHWMAPLANT unless the Fugitive Dust Control Plan for EUYARD specified in Appendix A has been implemented and is maintained. **(R 336.1371, R 336.1372, Act 451 324.5524)**
2. The permittee shall not operate EUHWMAPLANT unless the Preventative Maintenance Program specified in Appendix B has been implemented and is maintained. **(R 336.1910, R 336.1911)**
3. The permittee shall not operate EUHWMAPLANT unless the Emission Abatement Plan for Startup, Shutdown and Malfunctions specified in Appendix C has been implemented and is maintained. **(R 336.1911, R 336.1912)**



4. The permittee shall not operate EUHWMAPLANT unless the Compliance Monitoring Plan (CMP) for RUO specified in Appendix D, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. **(R 336.1201(3), R 336.1225, R 336.1371, R 336.1372, R 336.1910, R 336.1911, Act 451 324.5521, 40 CFR 279.55)**
5. The permittee shall maintain the efficiency of the EUHWMAPLANT drum mix burners, to control CO emissions, by fine tuning the burners for proper burner operation and performance. This shall be done at the start of each paving season and upon a malfunction of EUHWMAPLANT as shown by the CO emission monitoring data. **(R 336.1205)**

#### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall not operate EUHWMAPLANT unless the fabric filter dust collector is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the fabric filter dust collector requires a pressure drop range between 2 and 8 inches of water column. The minimum pressure drop shall not be less than 2 inches, water gauge, unless there is a reason for the pressure drop accepted by the AQD. **(R 336.1910)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor the feed rates of virgin aggregate and RAP/RAS to the EUHWMAPLANT on a continuous basis. **(R 336.1224, R 336.1225, R 336.1702)**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Verification and quantification of odor emissions from EUHWMAPLANT, by testing at owner's expense, in accordance with Department requirements, may be required for continued operation. Within 60 days upon notification from AQD District Supervisor, a complete stack sampling and odor threshold analysis plan using the Dynamic Dilution Method shall be submitted to the AQD. The stack sampling plan shall include provisions for various fuel usages, plant operating conditions, and odor neutralizer system operation (if any). The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results within 120 days from notification from the AQD District Supervisor. **(R 336.2001, R 336.2003, R 336.2004, R 336.1901)**

#### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1201, R 336.1205(1)(a))**
2. The permittee shall monitor, in a satisfactory manner, the feed rates of virgin aggregate, RAP, and RAS to the EUHWMAPLANT on a continuous basis. **(R 336.1224, R 336.1225, R 336.1702)**
3. The permittee shall monitor, with a handheld CO monitor, the CO emissions from EUHWMAPLANT and the production data associated with the time the emissions data were collected. The CO emissions should be less than 500 ppmv to ensure EUHWMAPLANT is operating properly. One data set shall be recorded for each of the following occurrences:
  - a) Upon start-up of each paving season.
  - b) Upon a malfunction.
  - c) After every 500 hours of operation.

A data set shall consist of at least eight separate CO readings and shall be taken over a total time period of thirty minutes or longer. Any request for an alternate monitoring schedule shall be submitted in writing to the AQD District Supervisor for review and approval. Data collected by this method shall be used for determining proper burner operation. **(R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**

4. The permittee shall monitor emissions and operating information for EUHWMAPLANT in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and I. The permittee shall keep records of all source emissions data and operating information on file and make them available upon request. **(40 CFR Part 60 Subparts A & I)**
5. The permittee shall conduct all necessary maintenance and make all necessary attempts to keep all drum mixer/burner and fabric filter dust collector components of EUHWMAPLANT maintained and operating in a satisfactory manner at all times. The owner or operator shall maintain a log of all significant maintenance activities conducted and all significant repairs made to EUHWMAPLANT. Maintenance records for the fabric filter dust collector shall be consistent with the Preventative Maintenance Program specified in Appendix B. All records shall be kept on file and made available to the Department upon request. **(R 336.1910, R 336.1911)**
6. The permittee shall keep the following records for each calendar month that EUHWMAPLANT is operated:
  - a) Identification, type and the amounts (in gallons) of all fuel oils combusted.
  - b) Sulfur content (percent by weight), specific gravity, flash point, and higher heating value (BTU/lb) of all fuel oils being combusted.
  - c) Tons of mixed asphalt containing RAP and/or RAS produced, including the average mass percent of combined RAP and RAS per ton of mixed asphalt produced containing RAP and/or RAS.

All records shall be kept on file and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1301, R 336.1402, R 336.1702)**

7. The permittee shall keep intermittent daily records of the following production information for EUHWMAPLANT:
  - a) The virgin aggregate feed rate.
  - b) The RAP/RAS feed rate.
  - c) The asphalt paving material product temperature.
  - d) Information sufficient to identify all components of the asphalt paving material mixture.

Upon start-up, the initial mix design and time shall be recorded. When a new mix design is activated after start-up, the time and new mix design shall be recorded. All records shall be kept on file until the end of the paving season in which they were recorded and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**

8. The permittee shall keep in a satisfactory manner, average daily as defined in SC II.5, monthly and 12-month rolling time period emission calculation records of all criteria pollutants and TACs listed in the Emission Limit Table for EUHWMAPLANT. If stack test results for EUHWMAPLANT exist for any of the aforementioned pollutants, those stack test results shall be used to estimate pollutant emissions subject to the approval of the AQD. In the event that stack test results do not exist for a specific pollutant, the applicable emission factor listed in the Emission Limit Table shall be used to estimate the emissions of a pollutant from EUHWMAPLANT. All records shall be kept on file and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**
9. The permittee shall keep records, as described in SC VI.3, of all CO emissions and related production data including the dates and times emissions were monitored. This data shall be used to ensure proper operation of the drum dryer or associated burner. All records shall be kept on file and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1205(3), R 336.1224, R 336.1225, R 336.1702)**
10. The permittee shall keep, in a satisfactory manner, average daily, monthly and 12-month rolling time period records of the amount of HWMA paving materials produced from EUHWMAPLANT. All records shall be kept on file and made available to the Department upon request. **(R 336.1205(1)(a), R 336.1205(3))**
11. The permittee shall monitor, in a satisfactory manner, the fuel usage rate for EUHWMAPLANT on a daily basis in gallons or cubic feet per day. **(R 336.1205(1)(a), R 336.1205(3), R 336.1225, R 336.1402)**
12. The pressure drop across the fabric filter dust collector shall be recorded at least once per day and kept in a bound notebook or electronically. These data shall be recorded in the Daily Operations Log Book.

**VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUHWMAPLANT. **(R 336.1201(7)(a))**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/ Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVHWMAPLANT	60	74	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d)

**IX. OTHER REQUIREMENTS**

N/A

**The following conditions apply to: EUYARD**

**DESCRIPTION:** Fugitive dust sources including: Plant roadways, Plant yard, Material storage piles, Material handling operations (excluding cold feed aggregate bins)

**Flexible Group ID:** N/A

**POLLUTION CONTROL EQUIPMENT:** N/A

**I. EMISSION LIMITS**

N/A

**II. MATERIAL LIMITS**

N/A

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate EUYARD unless the fugitive dust control plan specified in Appendix A has been implemented and is maintained. **(R 336.1371, R 336.1372, Act 451 324.5524)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

N/A

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1371, R 336.1372, R 336.1901)**
2. The permittee shall calculate in a satisfactory manner, the annual fugitive dust emissions. The fugitive dust emissions shall be calculated using the current U.S. EPA Compilation of Air Pollutant Emission Factors (AP-42) or other emission factors approved by the Department such as those used in the MAERS. The actual emission levels for EUYARD shall be reported to the AQD through the annual emission reporting required under Section 5503(k) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. **(R 336.1371, R 336.1372)**

**VII. REPORTING**

1. The permittee shall report the actual emission levels for EUYARD to the AQD through the annual emission reporting required under Section 5503(k) of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). **(R 336.1371, R 336.1372)**

**VIII. STACK/VENT RESTRICTIONS**

N/A

**IX. OTHER REQUIREMENTS**

N/A

**The following conditions apply to: EUACTANKS**

**DESCRIPTION:** Liquid asphalt cement storage tanks

**Flexible Group ID:** N/A

**POLLUTION CONTROL EQUIPMENT:** Vapor condensation and recovery system

**I. EMISSION LIMITS**

N/A

**II. MATERIAL LIMITS**

N/A

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate EUACTANKS unless the vapor condensation and recovery system is installed, maintained, and operated in a satisfactory manner. **(R 336.1224)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

N/A

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VII. REPORTING**

N/A

**VIII. STACK/VENT RESTRICTIONS**

N/A

**IX. OTHER REQUIREMENTS**

N/A

**The following conditions apply to: EUSILOS**

**DESCRIPTION:** Hot/Warm Mix Asphalt (HWMA) paving material product storage silo

**Flexible Group ID:** N/A

**POLLUTION CONTROL EQUIPMENT:** Top of silo emission capture system and load-out control.

**I. EMISSION LIMITS**

N/A

**II. MATERIAL LIMITS**

N/A

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate any silo in EUSILOS unless the emission capture system for the top of the storage silo is installed, maintained, and operated in a satisfactory manner. **(R 336.1224)**
2. The permittee shall not operate any silo in EUSILOS unless, for that silo, the load-out activities occur in an area which is satisfactorily enclosed except for truck entrance and exit points. Emissions collected from the truck load-out area shall be vented into the burning zone of EUHWMAPLANT or controlled by equivalent means. The permittee shall not operate EUSILOS unless the silo load-out control system is installed, maintained and operated in a satisfactory manner. **(R 336.1901)**
3. The permittee shall not operate EUSILOS unless the Fugitive Dust Control Plan for EUYARD specified in Appendix A has been implemented and is maintained. **(R 336.1371, R 336.1372, Act 451 324.5524)**
4. The permittee shall not operate EUSILOS unless an approvable Preventative Maintenance Program specified in Appendix B has been implemented and is maintained. **(R 336.1910, R 336.1911)**
5. The permittee shall not operate EUSILOS unless an approvable Malfunction Abatement Plan in Appendix C has been implemented and is maintained. **(R 336.1911, R 336.1912)**

**IV. DESIGN/EQUIPMENT PARAMETERS**

N/A

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VII. REPORTING**

N/A

**VIII. STACK/VENT RESTRICTIONS**

N/A

**IX. OTHER REQUIREMENTS**

N/A



**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Flexible Group ID</b>	<b>Flexible Group Description</b>	<b>Associated Emission Unit IDs</b>
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.	All Emission Units

**The following conditions apply Source-Wide to: FGFACILITY**

**POLLUTION CONTROL EQUIPMENT:** counter-flow drum and baghouse, top of silo emission capture system and load-out control, tanks vapor condensation and recovery system

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period	Equipment	Testing / Monitoring Method	Applicable Requirements
1. Each Individual HAP	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.3	R 336.1205(3)
2. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.3	R 336.1205(3)
3.CO	89.9 tpy*	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.8, SC VI.10	R 336.1205(1)(a), R 336.1205(3)

<sup>a</sup> Annual limits based on total 895,000 tons HWMA paving material production.

**II. MATERIAL LIMITS**

N/A

**III. PROCESS/OPERATIONAL RESTRICTIONS**

N/A

**IV. DESIGN/EQUIPMENT PARAMETERS**

N/A

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

N/A

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. All required calculations shall be completed in a format acceptable to the AQD District Supervisor and made available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1201)**
2. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period CO emission calculation records for FGFACILITY, as required by SC I.1. If stack test results for FGFACILITY exist for any of the aforementioned pollutants, those stack test results shall be used to estimate pollutant emissions subject to the approval of the AQD. In the event that stack test results do not exist for a specific pollutant, the

applicable emission factor listed in the Emission Limit Table shall be used to estimate the emissions of a pollutant from FGFACILITY. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(3))**

3. The permittee shall keep the following information for FGFACILITY:
  - a) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
  - b) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

If stack test results for FGFACILITY exist for any of the aforementioned pollutants, those stack test results may be used to estimate pollutant emissions subject to the approval of the AQD. In the event that stack test results do not exist for a specific pollutant, the applicable emission factor listed in the Emission Limit Table shall be used to estimate the emissions of a pollutant from FGFACILITY. All records shall be kept on file and made available to the Department upon request. **(R 336.1205(3))**

**VII. REPORTING**

N/A

**VIII. STACK/VENT RESTRICTIONS**

N/A

**IX. OTHER REQUIREMENTS**

N/A

## **Appendix A FUGITIVE DUST CONTROL PLAN**

**PURPOSE:** This plan provides dust control strategies for the areas adjacent to and associated with the equipment operations involved in the manufacture of Hot and Warm Mix Asphalt (HWMA) paving materials.

### **1. SITE MAINTENANCE**

- a. During the operating season, dust on all areas where vehicular traffic will travel shall be controlled by the application of water, sweeping, vacuuming, or other acceptable dust control method. This will occur a minimum of two times per month or more frequently as dictated by weather conditions and vehicular activity. The dust control method shall be acceptable as determined by the District Supervisor.
- b. The speed of vehicles on the site will be limited to 10 miles per hour or less. Signs will be posted to advise drivers of the speed limitation.
- c. Stock piling will be performed in a manner that minimizes freefall drop distance.
- d. Piles will be maintained to prevent fugitive dust. This includes the use of watering, covering and encrusting agents.

### **2. MANAGEMENT OF ON-SITE ROADWAYS**

- a. All the roadways on which the HWMA haul vehicles will travel are paved with HWMA. This includes the roadway on which the vehicles travel around the process equipment to be loaded with HWMA paving materials.
- b. During the operating season, the paved plant roads shall be controlled by the application of water, sweeping, vacuuming, or other acceptable dust control method that minimizes the introduction of the dust to the ambient air to control fugitive dust emissions and track-out dust. This will occur a minimum of two times per month or more frequently as dictated by weather conditions and vehicular activity. The dust control method shall be acceptable as determined by the District Supervisor.
- c. During the operating season, the unpaved travel surfaces shall be controlled by the application of water, sweeping, vacuuming, or other acceptable dust control method on a frequency sufficient to meet the visible emission opacity standard of five (5) percent opacity specified in Section 5524 of Article II, Chapter 1, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.
- d. Any aggregate spillage on roads shall be removed immediately.

### **3. ON-SITE MANAGEMENT OF HAUL VEHICLES**

- a. **INCOMING TRUCKS:** All trucks entering the site to deliver aggregates will be required to have the loads covered.
- b. **OUT-GOING TRUCKS:** All trucks leaving the site with HWMA paving materials will be required to cover their loads prior to leaving the site. A sign shall be posted to advise drivers of this requirement.

### **4. MANAGEMENT OF FRONT-END LOADER OPERATIONS**

The front-end loader operator shall be directed to avoid overfilling the bucket of the loader and the feed hoppers to prevent spillage, and to minimize the drop height of the material when loading the feed hoppers or transferring material to stockpiles.

### **5. RECORDKEEPING**

Records of dust control activities on travel surfaces and other surfaces where fugitive dust emissions occur shall be kept on file and made available to MDEQ staff upon request until the end of the paving season. The records will indicate the date, time, what was observed or the reason for the dust control activity (routine or other), and what action was taken. The record shall be maintained in the Operations Log Book.

### **6. FUGITIVE EMISSIONS FROM PROCESS EQUIPMENT AND FABRIC FILTER DUST COLLECTOR**

Any fugitive emissions from leak(s) and malfunction(s) from any transfer system, storage bin, mixer, hopper, or fabric filter dust collector shall be immediately corrected to prevent further fugitive emissions.

**Appendix B**  
**PREVENTATIVE MAINTENANCE PROGRAM FOR THE FABRIC FILTER DUST COLLECTOR**

The Preventative Maintenance Program for the Fabric Filter Dust Collector is for the purpose of keeping the dust collector in good operating condition, and thereby, maintaining the rated capture efficiency of the dust collector for the control of particulate matter. ALL REFERENCES TO VISIBLE EMISSIONS IN THIS DOCUMENT, PARTICULARLY IN SEC. 5, REFER SPECIFICALLY TO VISIBLE EMISSIONS CAUSED BY A DUST (PARTICULATE) EMISSION.

**1. FABRIC FILTER DUST COLLECTOR OPERATING PRESSURE DROP**

- a. The pressure drop across the fabric filter dust collector shall be continuously measured and the minimum pressure drop shall not be less than 1 inch, water gauge
- b. The pressure drop across the fabric filter dust collector shall be recorded at least once per day and kept in a bound notebook or electronically. These data shall be recorded in the Daily Operations Log Book.

**2. FABRIC FILTER DUST COLLECTOR /PLANT ALARM SYSTEM**

The fabric filter dust collector shall be equipped with a high temperature sensor and alarm system. The alarm system shall be designed to set off an alarm when the high temperature set-point has been violated, and, to begin a sequential shut-down of the plant if the situation is not resolved within a very short period of time after the alarm sounds.

**3. HANDLING AND STORAGE OF FABRIC FILTER DUST**

Accumulated fabric filter dust (particulate) shall be stored and/or be disposed of in a manner which minimizes the introduction of the air contaminants to the outer air.

**4. PIPING AND SEALS MAINTENANCE**

Piping and seals shall be replaced as needed.

**5. VISIBLE EMISSIONS AND ACTIONS TO BE TAKEN**

In the event visible emissions, which appear to exceed the standard allowed in General Condition No. 11 of this Permit to Install, are observed at the discharge point of the stack, the following actions shall be taken:

If no certified visible emissions reader can be on-site within 60 minutes of observing the visible emissions to verify the emission density, operations shall be ceased immediately and the cause of the visible emissions determined and corrected prior to operating the plant again.

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**REMINDER:** If the visible emissions continue for more than 2 hours, in excess of an emission standard, an excess emissions report must be made to the MDEQ.

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**6. BLACK LIGHT INSPECTIONS**

A black light test shall be conducted at least once per year - before operations begin for a paving season. Black light inspection equipment and materials shall be available for use at the facility and used as needed during the paving season.

## **Appendix B - Continued**

### **7. INVENTORY OF FILTER BAGS**

An inventory of fabric filter bags shall be maintained by the facility owner or operator so that filter bags will be available to this site within four hours of requesting the filter bags. In addition, a minimum of 15 filter bags shall be kept on-site at all times. An inventory of other replacement parts for the fabric filter dust collector shall be maintained at all times.

### **8. FABRIC FILTER DUST COLLECTOR INSPECTION RECORD**

Records of the following shall be maintained by the owner or operator of the facility:

- Visual inspections of the interior components of the fabric filter dust collector, including date, time, and findings;
- Black light inspections, including date, time, and findings;
- Number of filter bags installed as a result of each inspection to replace filter bags already in use in the fabric filter dust collector, including date, time, location, and whether the replacement filter bag was brand new or a cleaned, previously used filter bag;
- An explanation (i.e., a description of the damage found) for each filter bag removed from the fabric filter dust collector and confirmation that another filter bag was installed to replace it;
- Each observation of visible emissions at the stack discharge point and description of response to the observed visible emission, including date and time of visible emission occurrence and results of EPA Method 9 observation, if any. Any such visible emission shall be recorded in the Daily Operations Log Book and made available upon request to the AQD.
- All significant maintenance activities performed on the fabric filter dust collector.

## **Appendix C**

### **EMISSION ABATEMENT PLAN FOR STARTUP, SHUTDOWN AND MALFUNCTIONS**

#### **NORMAL STARTUP PROCEDURE**

The plant computer controls plant startup. At startup the plant operator will enter the mix design, the tons per hour and the number of tons to be produced into the plant operations computer. Once the operator starts the equipment the computer will start the cold feed bins and set the feed rate (tons per hour) requested. The feed rate will be different for each mix design and production rate.

When the plant computer senses that aggregate is crossing over the belt scale, a timer that has been previously calibrated for the particular mix, starts to count down. When the timer reaches zero the asphalt is started and fed to the mixer. The two products (aggregate and asphalt cement) meeting together at the correct time will eliminate most dust that would escape from the mixing drum.

Material that is discharged at startup is removed by way of the drag slat and discharge gate. This material is dropped into a loader bucket, dump truck or a holding area. The material is then moved to the recycle pile. The drop height from the discharge gate is kept to the very minimum to keep any escaping dust from blowing.

#### **NORMAL SHUTDOWN PROCEDURE**

When shutting down the mixing operation, the plant computer stops the cold feed bins first. Material that is in process is allowed to proceed down the weigh belt. When the weigh belt senses that all material has cleared the belt a timer starts counting down to shut off the asphalt cement. This timer allows all of the aggregate to clear the drying drum and enter the mixer. The asphalt cement is timed for each mix design so that the last of the aggregate and the asphalt cement meet at the mixing drum together.

Any mix that is waste is discharged into the loader bucket, dump truck or into a holding area under the drag slat discharge gate and is taken to the RAP pile for later crushing

#### **HOT STOPS - HOT STARTS**

If the silos become too full, the plant operator may have to make a hot stop, (dryer and mixer full of material). No material is discharged during a hot stop. The plant can remain in this mode for up to two hours.

After a hot stop, the plant will make a hot start. The exhaust fan and burner will be started and once running, the rest of the plant will be started. Cold or off-spec material is discharged through the drag slat discharge gate and placed in the RAP pile for later use.

#### **MALFUNCTION STOPS**

If a malfunction (computer or mechanical) occurs during drying/mixing operations, a hot stop will be initiated until the problem is corrected. If the problem cannot be corrected and the dryer/mixer must be emptied, the asphalt cement can be controlled manually. This will be done only after all attempts to correct the problem are exhausted. If the asphalt pump fails and cannot be repaired, the drum will be emptied of mixed material until the discharged aggregate gets dusty. The drum will then be stopped and the asphalt pump repaired. A water supply at each location can be used to knock down any blowing dust.

#### **IDENTIFICATION OF SUPERVISORY AND MAINTENANCE PERSONNEL**

An updated list of current supervisory and maintenance personnel shall be kept at the plant. Descriptions of the responsibilities of these individuals for operation of the plant during startups, shutdowns, or malfunctions, as well as inspections and repairs, shall be stated on the updated list.

### Appendix C – Continued

#### DESCRIPTION OF INSPECTED ITEMS

A daily walk around inspection will be done each morning while the plant is warming up. After startup, observations will be carried out continuously throughout the day by the plant operator and the loader operator during operations. The following items shall be inspected/observed:

- Roadways (fugitive dust)
- Cold feed bins (falling aggregate)
- Aggregate feed belts (falling aggregate)
- Dryer (seals for dust escaping)
- Bucket elevator (seals for dust escaping)
- Aggregate chutes (seals for dust escaping)
- Screen (door seals for dust escaping)
- Weigh hopper (seals for dust escaping)
- Mixer (seals for dust escaping)
- Baghouse stack (opacity)
- Baghouse screws (shaft and door seals for dust escaping)
- Chutes, screw augers, and housings (for any leaks)

A more thorough inspection will be done during the winter shutdown (between December 1 and April 1) for maintenance and repairs. The following items will be inspected and repairs made as needed:

- Cold feed bins (seals and belts rollers)
- Belt lines (belts and rollers)
- Dryer (shell, seals, flights)
- Bucket elevator (chain, buckets, bearings, seals)
- Chutes (liners, seals)
- Screen (door seals, fugitive ductwork)
- Weigh hopper (seals, calibration)
- Mixer (seals, wear plate)

The baghouse will get a thorough inspection from the front inlet to the rear exhaust fan. This inspection will be done every spring before the paving season starts. (Additional visual inspections may be required before and during the paving season as required by Appendix B). The following items to be inspected are:

- Ductwork (inspected for thickness, will it last for the season)
- Blow pipes, diaphragm valves (are they working, good connections)
- Bags and cages (condition of bags, age, number replaced during last season)
- Dust screws - shaft seals and screw cover doors

#### REPLACEMENT PARTS

As required by Appendix B, the following shall be kept in stock at all times:

- A minimum of 15 bags.
- A minimum of 5 pounds of black light powder. (Recommended quantity for the number of square feet of baghouse cloth.)
- A minimum of two (2) tubes of silicone caulk for minor leaks around doors and seals.



## Appendix C – Continued

### **BAGHOUSE VARIABLES AND MONITORING**

The baghouse is monitored continuously (as specified in Appendix B) by the use of a magnehelic gage. The pressure differential between the dirty and clean side of the baghouse shall be maintained above 2 inches water gauge. If the pressure rises above 10 inches water gauge, signaling an inoperative diaphragm valve, the plant shall be stopped and the defective valve repaired or replaced. If the differential pressure drops below 2 inches water gauge the company shall inspect for a torn bag or a problem with the tubesheet between the dirty and clean side of the baghouse. This problem will also result in a dirty stack. The only time the baghouse will normally drop below 2 inches water gauge is if a large number of filter bags are replaced.

If a large number of bags are replaced (over 100) the pressure on the magnehelic will drop slightly. This drop will only last for a day or less depending on the production.

Monitoring of the baghouse is done by observation, magnehelic or by the high temperature alarm that is set to go off at a stack temperature of 375/400 degrees Fahrenheit.

### **CORRECTIVE PROCEDURES AND RESPONSIBLE PERSONS**

This startup, shutdown, malfunction plan shall be followed to meet the compliance limits. If the limits are exceeded it is the responsibility of the plant supervisor, or in his absence the plant operator, to stop the plant and correct the problem immediately. Rule 336.1912 shall be followed when abnormal conditions exist.

### **DRUM MIX AND BATCH - NORMAL STARTUP PROCEDURES**

During startup, operation and shutdown the following items will be monitored continuously:

**Stack Temperature** - As material starts through the plant the temperature must be brought up slowly by manually adjusting the burner. As the operator opens the burner, the exhaust fan damper must also be opened to maintain one quarter to one half inch of suction on the burner end of the drum.

**Mix Temperature** - As material starts flowing through the plant it is critical to watch mix discharge temperature in addition to the stack temperature. A discharge temperature that is too high will cause blue smoke. A temperature that is too low will produce an unacceptable product.

**Exhaust Magnehelic** - As material is fed into the drum and the burner is opened up, the differential pressure in the baghouse will increase. As the plant reaches normal operating parameters the pressure differential will settle between 2 and 10 inches water gauge. The differential pressure can be adjusted by opening or closing the exhaust damper. The operator shall keep between one quarter and one half-inch draw on the burner end for maximum efficiency.

Along with monitoring the above items the operator shall monitor the weather to determine any changes to the moisture levels in the aggregate and RAP. The moisture content determines how to adjust the burner to reach the desired mix discharge temperature.