



### Section B.1: Maximum Uncontrolled Emissions (under normal operating conditions)

Maximum Uncontrolled Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless operating capacity and/or hours of operation are specifically limited in an enforceable permit. (Existing limits on operating conditions, not emissions or use of a control device, may be used when determining uncontrolled emissions.) Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "--" symbol indicates that emissions of this pollutant are not expected. Emissions  $\geq 0.01$  ton/yr from a specific emission unit must be included. Please do not change the column widths on this table.

Emission Point ID	TSP <sup>1</sup> (PM)		PM-10 <sup>1</sup>		PM-2.5 <sup>1</sup>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		TRS <sup>2</sup>		Lead		Total HAPs	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-001	8,380.38	6,983.65	1,939.62	1,616.35	469.62	391.35	1.02	0.85	7.80	6.50	39.00	32.50	9.60	8.00	-	-	0.00	0.00	1.61	1.34
AA-002	0.00	0.00	0.18	0.15	0.18	0.15	-	-	-	-	0.35	0.29	3.66	3.05	-	-	-	-	0.06	0.05
AA-003	0.00	0.00	0.16	0.13	0.16	0.13	-	-	-	-	0.40	0.34	1.17	0.98	-	-	-	-	0.01	0.01
AA-004	78.50	15.70	27.50	5.50	27.50	5.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AA-005	14.19	15.67	5.20	6.26	0.79	0.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	8,473.07	7,015.02	1,972.65	1,628.38	498.24	398.07	1.02	0.85	7.80	6.50	39.76	33.13	14.43	12.02	0.00	0.00	0.00	0.00	1.68	1.40

<sup>1</sup> **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

<sup>2</sup> **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H<sub>2</sub>S), methyl mercaptan (CH<sub>4</sub>S), dimethyl sulfide (C<sub>2</sub>H<sub>6</sub>S), and dimethyl disulfide (C<sub>2</sub>H<sub>6</sub>S<sub>2</sub>).

## Section B.2: Proposed Allowable Emissions

Proposed Allowable Emissions (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "--" symbol indicates that emissions of this pollutant are not expected. Emissions  $\geq 0.01$  ton/yr from a specific emission unit must be included. Additional columns may be added if there are regulated pollutants (other than HAPs and GHGs) emitted at the facility. List HAPs in Section B.3 and GHGs in Section B.4 (if applicable).

Emission Point ID	TSP <sup>1</sup>		PM10 <sup>1</sup>		PM2.5 <sup>1</sup>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		TRS		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-001	4.08	3.40	6.90	5.75	6.69	5.58	1.02	0.85	7.80	6.50	39.00	32.50	9.60	8.00	-	-	0.00	0.00
AA-002	0.00	0.00	0.18	0.15	0.18	0.15	-	-	-	-	0.35	0.29	3.66	3.05	-	-	-	-
AA-003	0.00	0.00	0.16	0.13	0.16	0.13	-	-	-	-	0.40	0.34	1.17	0.98	-	-	-	-
AA-004	0.22	0.04	0.12	0.02	0.02	0.00	-	-	-	-	-	-	-	-	-	-	-	-
AA-005	14.19	15.67	5.20	6.26	0.79	0.95	-	-	-	-	-	-	-	-	-	-	-	-
<b>Totals</b>	18.50	19.11	12.56	12.31	7.83	6.80	1.02	0.85	7.80	6.50	39.76	33.13	14.43	12.02	0.00	0.00	0.00	0.00

<sup>1</sup> **Condensables:** Include condensable particulate matter emissions in particulate matter calculations for PM-10 and PM-2.5, but not for TSP (PM).

<sup>2</sup> **TRS:** Total reduced sulfur (TRS) is the sum of the sulfur compounds hydrogen sulfide (H<sub>2</sub>S), methyl mercaptan (CH<sub>4</sub>S), dimethyl sulfide (C<sub>2</sub>H<sub>6</sub>S), and dimethyl disulfide (C<sub>2</sub>H<sub>6</sub>S<sub>2</sub>).

### Section B.3: Proposed Allowable Hazardous Air Pollutants (HAPs)

Proposed Allowable HAPs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard (e.g., a MACT standard); or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Select an individual HAP from the dropdown list provided. **Emissions  $\geq$  0.01 ton/yr of an individual HAP from a specific emission unit must be provided.** Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or are below the reporting threshold. Select the appropriate HAP from the drop down menu in the header cell of the given column in the table below. Additional columns may be added as necessary to address each HAP.

Emission Point ID	Total HAPs		Formaldehyde		Benzene (including benzene from gasoline)		Ethyl benzene		Hexane		2,2,4-Trimethylpentane		Methyl chloroform (1,1,1-Trichloroethane) (non-voc)		Toluene		Xylenes (isomers and mixture)	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
AA-001	1.61	1.34	0.93	0.78	0.12	0.10	0.07	0.06	0.28	0.23	0.01	0.01	0.01	0.01	0.05	0.04	0.06	0.05
AA-002	0.06	0.05	0.03	0.02														
AA-003	0.01	0.01																
AA-004	-	-																
AA-005	-	-																
<b>Totals:</b>	1.68	1.40	0.96	0.80	0.12	0.10	0.07	0.06	0.28	0.23	0.01	0.01	0.01	0.01	0.05	0.04	0.06	0.05

### Section B.4: Greenhouse Gas (GHG) Emissions

This form is required for facilities that have or will require a Title V Operating Permit and for all industries in the energy and oil and gas sectors (i.e., SIC codes beginning with 13, 29, 46, and 49). Proposed Allowable GHGs (Potential to Emit) are those emissions the facility is currently permitted to emit as limited by a specific permit requirement or federal/state standard; or the emission rate at which the facility proposes to emit considering emissions control devices, restrictions to operating rates/hours, or other requested permit limits that reduce the maximum emission rates. Applicants must report potential emission rates in SHORT TONS per year, as opposed to metric tons required by Part 98. Emission Point numbering must be consistent throughout the application package and, for existing emission points, should match any MDEQ ID's in the current permit. Only those emission points with emissions of greenhouse gases are required to be provided on this form.

Emission Point ID	GWPs <sup>1</sup>	CO <sub>2</sub> (non-biogenic) ton/yr	CO <sub>2</sub> (biogenic) <sup>2</sup> ton/yr	N <sub>2</sub> O ton/yr	CH <sub>4</sub> ton/yr	SF <sub>6</sub> ton/yr	PFC/HFC <sup>3</sup> ton/yr				Total GHG Mass Basis ton/yr <sup>5</sup>	Total CO <sub>2</sub> e ton/yr <sup>6</sup>
	1	1	1	265	28	22,800	footnote 4					
AA-001	mass GHG	8250.00		0.01	1.85						8251.86	
	CO <sub>2</sub> e	8250.00		3.01	51.8							8304.81
AA-002	mass GHG				0.01						0.01	
	CO <sub>2</sub> e				0.22							0.22
AA-003	mass GHG				0.06						0.06	
	CO <sub>2</sub> e				1.78							1.78
	mass GHG											
	CO <sub>2</sub> e											
	mass GHG											
	CO <sub>2</sub> e											
	mass GHG											
	CO <sub>2</sub> e											
	mass GHG											
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	mass GHG											
	CO <sub>2</sub> e											
	mass GHG											
	CO <sub>2</sub> e											
FACILITY TOTAL	mass GHG	8250.00		0.01	1.92						8251.93	
	CO <sub>2</sub> e	8250.00		3.01	53.80							8306.81

<sup>1</sup> GWP (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.



**AA-001 - Drum Mixer with 100 MMBtu/hour natural-gas fired burner**

500,000 HMA Annual Throughput (TPY)  
 300 HMA Hourly Throughput (Tons/Hour)  
 100 MMBtu/hour

Criteria Pollutants	EF		Units	Ref	Uncontrolled Emissions		Potential Emissions	
	Uncontrolled	Controlled			lb/hr	TPY	lb/hr	TPY
CO	0.13	0.13	lb/ton	1	39.00	32.50	39.00	32.50
NO <sub>x</sub>	0.026	0.026			7.80	6.50	7.80	6.50
SO <sub>2</sub>	0.0034	0.0034			1.02	0.85	1.02	0.85
CO <sub>2</sub>	33	33			9900.00	8,250.00	9900.00	8,250.00
PM	28	0.033		2	8400.00	7,000.00	9.90	8.25
PM <sub>10</sub>	6.4654	0.023			1939.62	1,616.35	6.90	5.75
PM <sub>2.5</sub>	1.5654	0.0223			469.62	391.35	6.69	5.58
PM <sub>con</sub>	0.0654	0.0194			19.62	16.35	5.82	4.85
VOC	0.032	0.032		3	9.60	8.00	9.60	8.00
<b>Hazardous Air Pollutants</b>					1.61	1.34	1.61	1.34
Benzene	0.00039	0.00039	lb/ton	4	0.12	0.10	0.12	0.10
Ethylbenzene	0.00024	0.00024			0.07	0.06	0.07	0.06
Formaldehyde	0.0031	0.0031			0.93	0.78	0.93	0.78
Hexane	0.00092	0.00092			0.28	0.23	0.28	0.23
Isooctane	4.00E-05	4.00E-05			0.01	0.01	0.01	0.01
Methyl Chloroform	4.80E-05	4.80E-05			0.01	0.01	0.01	0.01
Toluene	0.00015	0.00015			0.05	0.04	0.05	0.04
Xylene	0.0002	0.0002			0.06	0.05	0.06	0.05
Total PAH	0.00019	0.00019			0.06	0.05	0.06	0.05
Arsenic	5.60E-07	5.60E-07			5	0.00	0.00	0.00
Beryllium	0	0		0.00		0.00	0.00	0.00
Cadmium	4.10E-07	4.10E-07		0.00		0.00	0.00	0.00
Chromium	5.50E-06	5.50E-06		0.00		0.00	0.00	0.00
Hexavalent Chromium	4.50E-07	4.50E-07		0.00		0.00	0.00	0.00
Lead	6.20E-07	6.20E-07		0.00		0.00	0.00	0.00
Manganese	7.70E-06	7.70E-06		0.00		0.00	0.00	0.00
Mercury	2.40E-07	2.40E-07		0.00		0.00	0.00	0.00
Nickel	6.30E-05	6.30E-05		0.02		0.02	0.02	0.02
Selenium	3.50E-07	3.50E-07		0.00		0.00	0.00	0.00
<b>Greenhouse Gases</b>								
CO <sub>2</sub>	33	33	lb/ton	1	9900.00	8250.00	9900.00	8250.00
CH <sub>4</sub>	7.40E-03	7.40E-03	lb/ton	3	2.22	1.85	2.22	1.85
N <sub>2</sub> O	4.55E-05	4.55E-05	lb/MMBtu	6	0.01	0.01	0.01	0.01
CO <sub>2</sub> e				7	9965.77	8304.81	9965.77	8304.81

**References**

1	US EPA AP-42 Chapter 11.1, Table 11.1-7., EMISSION FACTORS FOR CO, CO <sub>2</sub> , NO <sub>x</sub> , AND SO <sub>2</sub> FROM DRUM MIX HOT MIX ASPHALT PLANTS
2	US EPA AP-42 Chapter 11.1, Tables 11.1-3 and 11.1-4, PARTICULATE MATTER EMISSION FACTORS FOR DRUM MIX HOT MIX ASPHALT PLANTS
3	US EPA AP-42 Chapter 11.1, Table 11.1-8., EMISSION FACTORS FOR TOC, METHANE, VOC, AND HCl FROM DRUM MIX HOT MIX ASPHALT PLANTS
4	US EPA AP-42 Chapter 11.1, Table 11.1-10., EMISSION FACTORS FOR ORGANIC POLLUTANT EMISSIONS FROM DRUM MIX HOT MIX ASPHALT PLANTS
5	US EPA AP-42 Chapter 11.1, Table 11.1-12., EMISSION FACTORS FOR METAL EMISSIONS FROM DRUM MIX HOT MIX ASPHALT PLANTS EMISSIONS FROM DRUM MIX HOT MIX ASPHALT PLANTS
6	Emission Factor from Table C-2 to Subpart C of Part 98, Title 40
7	Calculated based on Global Warming Potentials from Table A-1 to Subpart A of Part 98, Title 40

**Calculation Methodology**

TPY = (Annual Throughput) x EF x (ton/2000 lb)

lb/hr = (Hourly Throughput) x EF

**AA-002 - Asphalt Silo Filling**

500,000 Annual Throughput (TPY)  
 300 Hourly Throughput (Tons/Hour)  
 -0.5 Asphalt volatility (V)  
 325 HMA mix temp in °F (T)

Criteria Pollutants	EF	Units	Ref	Potential Emissions	
				lb/hr	TPY
CO	1.18E-03	lb/ton	1	0.35	0.29
PM	5.86E-04			0.18	0.15
PM <sub>10</sub>	5.86E-04			0.18	0.15
PM <sub>2.5</sub>	5.86E-04			0.18	0.15
PM <sub>con</sub>	5.86E-04			0.18	0.15
VOC	1.22E-02		1,2	3.66	3.05
<b>Hazardous Air Pollutants</b>				0.06	0.05
Formaldehyde	8.41E-05	lb/ton	1,2	0.03	0.02
Total VOC HAPs	1.58E-04			0.05	0.04
Total PAH HAPs	2.89E-05			1,3	0.01
<b>Greenhouse Gases</b>					
CH <sub>4</sub>	3.17E-05	lb/ton	1,2	0.01	0.0079
CO <sub>2e</sub>			3	0.27	0.22

**References**

1	US EPA AP-42 Chapter 11.1, Table 11.1-14., PREDICTIVE EMISSION FACTOR EQUATIONS FOR LOAD-OUT AND SILO FILLING OPERATIONS
2	US EPA AP-42 Chapter 11.1, Tables 11.1-16, SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS—ORGANIC VOLATILE-BASED COMPOUNDS
3	US EPA AP-42 Chapter 11.1, Tables 11.1-15, SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS—ORGANIC PARTICULATE-BASED COMPOUNDS
4	Calculated based on Global Warming Potentials from Table A-1 to Subpart A of Part 98, Title 40

**Calculation Methodology**

TPY = (Annual Throughput) x EF x (ton/2000 lb)

lb/hr = (Hourly Throughput) x EF

Silo filling (SCC 3-05-002-13)	Total PM <sup>b</sup>	EF = 0.000332 + 0.00105(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	Organic PM <sup>c</sup>	EF = 0.00105(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	TOC <sup>d</sup>	EF = 0.0504(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	CO	EF = 0.00488(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>

**AA-003 - Asphalt Silo Load-out**

500,000 Annual Throughput (TPY)  
 300 Hourly Throughput (Tons/Hour)  
 -0.5 Asphalt volatility (V)  
 325 HMA mix temp in °F (T)

Criteria Pollutants	EF	Units	Ref	Potential Emissions	
				lb/hr	TPY
CO	1.35E-03	lb/ton	1	0.40	0.34
PM	5.22E-04			0.16	0.13
PM <sub>10</sub>	5.22E-04			0.16	0.13
PM <sub>2.5</sub>	5.22E-04			0.16	0.13
PM <sub>con</sub>	5.22E-04			0.16	0.13
VOC	3.91E-03		1,2	1.17	0.98
<b>Hazardous Air Pollutants</b>				0.01	0.01
Total VOC HAPs	2.70E-05	lb/ton	1,2	0.01	0.01
Total PAH HAPs	2.02E-05		1,3	0.01	0.01
<b>Greenhouse Gases</b>					
CH <sub>4</sub>	2.54E-04	lb/ton	1,2	0.08	0.0635
CO <sub>2</sub> e			4	2.13	1.78

**References**

1	US EPA AP-42 Chapter 11.1, Table 11.1-14., PREDICTIVE EMISSION FACTOR EQUATIONS FOR LOAD-OUT AND SILO FILLING OPERATIONS
2	US EPA AP-42 Chapter 11.1, Tables 11.1-16, SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS—ORGANIC VOLATILE-BASED COMPOUNDS
3	US EPA AP-42 Chapter 11.1, Tables 11.1-15, SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS—ORGANIC PARTICULATE-BASED COMPOUNDS
4	Calculated based on Global Warming Potentials from Table A-1 to Subpart A of Part 98, Title 40

**Calculation Methodology**

TPY = (Annual Throughput) x EF x (ton/2000 lb)

lb/hr = (Hourly Throughput) x EF

Source	Pollutant	Equation
Drum mix or batch mix plant load-out (SCC 3-05-002-14)	Total PM <sup>b</sup>	EF = 0.000181 + 0.00141(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	Organic PM <sup>c</sup>	EF = 0.00141(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	TOC <sup>d</sup>	EF = 0.0172(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>
	CO	EF = 0.00558(-V)e <sup>((0.0251)(T + 460) - 20.43)</sup>

**AA-004 - Lime Storage Silo**

10,000 Lime Silo Annual Throughput (TPY)  
25 Lime Silo Hourly Throughput (Tons/Hour)

50 lb/cf bulk density  
2% weight % of HMA

Criteria Pollutants	EF		Units	Ref	Uncontrolled Emissions		Potential Emissions	
	Uncontrolled	Controlled			lb/hr	TPY	lb/hr	TPY
PM	3.14	0.0089	lb/ton	1	78.50	15.70	0.22	0.04
PM <sub>10</sub>	1.1	0.0049			27.50	5.50	0.12	0.02
PM <sub>2.5</sub>	1.1	0.00084		1,2	27.50	5.50	0.02	0.00

**References**

- 1 US EPA AP-42 Chapter 11.12, Table 11.12-2., EMISSION FACTORS FOR CONCRETE BATCHING.
- 2 Texas Commission on Environmental Quality - <https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss-calc-hotmix.xlsx>

**Calculation Methodology**

TPY = (Annual Throughput) x EF x (ton/2000 lb)

lb/hr = (Hourly Throughput) x EF

**Notes**

PM2.5 conservatively assumed equal to PM10 for Uncontrolled EF

**AA-005 - Aggregate Material Storage and Handling**

475,000 Aggregate and RAP Annual Throughput (TPY)  
 285 Aggregate and RAP Hourly Throughput (Tons/Hour)  
 7 Number of Conveyor Transfer/Drop Points  
 2.5 Material Stockpile Area (acres)

**Screening and Conveyor Emissions**

Criteria Pollutants	Emission Factors		Units	Reference	Screening		Conveyors		Total Emissions	
	Screening	Conveyors			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
PM	0.025	0.003	lb/ton	1,2	7.13	5.94	5.99	4.99	13.11	10.93
PM <sub>10</sub>	0.00865	0.0011			2.47	2.05	2.19	1.83	4.66	3.88
PM <sub>2.5</sub>	0.001317	0.000167			0.38	0.31	0.33	0.28	0.71	0.59

**Stockpile Emissions**

Criteria Pollutants	Emission Factors		Units	Reference	Stockpile Emissions	
	lb/acre	lb/ton			lb/hr	TPY
PM	10.4	0.33	lb/ton	2,3	1.08	4.75
PM <sub>10</sub>	5.2	0.165			0.54	2.37
PM <sub>2.5</sub>	0.78	0.02475			0.08	0.36

**Total Potential Emissions**

Criteria Pollutants	Emission Factors	
	lb/hr	TPY
PM	14.19	15.67
PM <sub>10</sub>	5.20	6.26
PM <sub>2.5</sub>	0.79	0.95

- 1 US EPA AP-42 Chapter 11.19.2 Crushed Stone Processing and Pulverized Mineral Processing
- 2 Texas Commission on Environmental Quality - <https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/emiss-calc->
- 1 The PM active and inactive emission factors are from "Cowherd, Jr., C. Development of Emission Factors For Fugitive Dust Sources. EPA document Number. EPA-450/3-74-037. Research Triangle Park: U. S.

**Calculation Methodology**

TPY = (Annual Throughput) x EF x (ton/2000 lb)  
 lb/hr = (Hourly Throughput) x EF

**Notes**

Stockpile emissions based on 8-12 active hours per day and 5 active days per week