WASTE INNOVATIONS
1801 Annapolis Road, Baltimore, MD 21230
www.win-waste.com

March 30, 2024

Maryland Department of the Environment
Air and Radiation Management Administration
1800 Washington Boulevard, Suite 715
Baltimore, Maryland 21230-1720
Attention: Daniel Davis, Compliance Program

Dear Daniel:

Enclosed are the Wheelabrator Baltimore L.P. 2023 Annual Title V Permit No. 24-510-01886 Compliance Certification and Emission Certification Reports. Any questions regarding this report should be forwarded to Tim Porter, Director Air Quality (tportert@win-waste.com) or 603-498-2134.

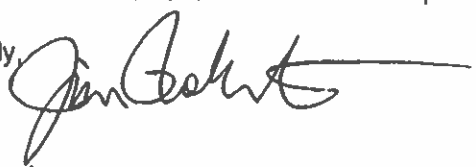
Specifically, this report contains:

1. EPA Form A –Comp – Annual Compliance Certification
2. Plant Wide Conditions Certifications
3. MDE Emissions Certification Report
   a. Form 1 - General Facility Information Report
   b. Form 2 – Criteria Air Pollutants Emission Certification Reports
   c. Form 3 – Emission Certification Report Particulate Matter
   d. Form 4 – Toxic Air Pollutants Emission Certification Reports
   e. Form 5 – Billable Toxic Air Pollutants Emission Certification Reports
   f. Form 6 – Greenhouse Gas Air Pollutants Emissions Certification Reports
4. Annual Emission Calculation Sheet and Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware of the significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please advise if additional information is required.

Sincerely,



Jim Robertson
Plant Manager

cc: Associate Director
Office of Enforcement and Permit Review (3AP10)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029 (with)

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard, Suite 715 Baltimore Maryland 21230-1720
410-537-3000 1-800-633-6101 http://www.mde.state.md.us
Air and Radiation Management Administration
Air Quality Compliance Program
410-537-3220

FORM 1:

GENERAL FACILITY INFORMATION
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

A. FACILITY IDENTIFICATION	Do Not Write in This Space
Facility Name **Wheelabrator Baltimore, L.P.**	Date Received Regional
Address **1801 Annapolis Road**	Date Received State
City **Baltimore** County **City of Baltimore** Zip Code **21230**	AIRS Code
B. Briefly describe the major function of the facility	FINDS Code
Wheelabrator Baltimore, L.P. is a large municipal solid waste combustor which processes up to 2,250	SIC Code
tons of municipal solid waste per day and has the capacity to generate 60,000 kilowatts of energy.	Facility Number:
	TEMPO ID:

C. SEASONAL PRODUCTION (%, if applicable)

Winter *(Dec.-Feb.)*	Spring *(Mar – May)*	Summer *(Jun – Aug)*	Fall *(Sept – Nov)*
25.1%	18.7%	28.9%	27.4%

Reviewed by:

Name Date

D. Explain any increases or decreases in emissions from the previous calendar year for each registration at this facility.

Changes due to seasonal variability (weather / fuel related) as well as annual variability in stack test results.

E. CONTROL DEVICE INFORMATION (for NOx and VOC sources only)

Control Device	Capture Efficiency	Removal Efficiency

I am familiar with the facility and the installations and sources for which this report is submitted. I have personally examined the information in this report, which consists of 19 pages (including attachments) and certify that the information is correct to the best of my knowledge.

Jim Robertson	Plant Manager	3/29/2024
Name (Print/Type)	Title	Date
Signature		(410) 234-0808 x212
		Telephone

FORM 2:

CRITERIA AIR POLLUTANTS
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **Carbon Monoxide (CO)**

Equipment Description/ Registration No.	SCC Number	Fuel		Actual Emissions		Operating Schedule (Actual)				TOSD	Operating Schedule			Emissions Methods
				Tons/yr	Lbs/day	Hrs/dy	Dys/wk	Wk/yr	Days/yr	Lbs/dy	Hrs/dy	Start	End	
2-24-0255 Boiler 1		MSW	S	19.9	159	24	7	52	251		24	00:00	24:00	C-1
			F											
2-24-0256 Boiler 2		MSW	S	18.2	104	24	7	52	350		24	00:00	24:00	C-1
			F											
2-24-0257 Boiler 3		MSW	S	17.3	102	24	7	52	339		24	00:00	24:00	C-1
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
Total				55.4	365									

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

TOSD: Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. MSW = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 2:

CRITERIA AIR POLLUTANTS
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **Lead**

Equipment Description/ Registration No.	SCC Number	Fuel		Actual Emissions		Operating Schedule (Actual)				TOSD	Operating Schedule			Emissions Methods
				Tons/yr	Lbs/day	Hrs/dy	Dys/wk	Wk/yr	Days/yr	Lbs/dy	Hrs/dy	Start	End	
2-24-0255 Boiler 1		**MSW**	S	**0.0173**	**0.138**	**24**	**7**	**52**	**251**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0256 Boiler 2		**MSW**	S	**0.0047**	**0.027**	**24**	**7**	**52**	**350**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0257 Boiler 3		**MSW**	S	**0.009**	**0.009**	**24**	**7**	**52**	**339**		**24**	**00:00**	**24:00**	**C-1**
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
Total				**0.0236**	**0.174**									

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

TOSD: Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. **MSW** = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 2:

CRITERIA AIR POLLUTANTS
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **Nitrogen Oxides (NOx)**

Equipment Description/ Registration No.	SCC Number	Fuel		Actual Emissions		Operating Schedule (Actual)				TOSD	Operating Schedule			Emissions Methods
				Tons/yr	Lbs/day	Hrs/dy	Dys/wk	Wk/yr	Days/yr	Lbs/dy	Hrs/dy	Start	End	
2-24-0255 Boiler 1		**MSW**	S	**195.5**	**1558**	**24**	**7**	**52**	**251**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0256 Boiler 2		**MSW**	S	**274.4**	**1568**	**24**	**7**	**52**	**350**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0257 Boiler 3		**MSW**	S	**268.2**	**1582**	**24**	**7**	**52**	**339**		**24**	**00:00**	**24:00**	**C-1**
			F											
			S											
			F											
			S											
			F											
			S											
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			F											
			S											
			F											
Total				**738.1**	**4708**									

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

TOSD: Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. **MSW** = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 2:

CRITERIA AIR POLLUTANTS
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **Sulfur Dioxide (SO2)**

Equipment Description/ Registration No.	SCC Number	Fuel		Actual Emissions		Operating Schedule (Actual)				TOSD	Operating Schedule			Emissions Methods
				Tons/yr	Lbs/day	Hrs/dy	Dys/wk	Wk/yr	Days/yr	Lbs/dy	Hrs/dy	Start	End	
2-24-0255 Boiler 1		**MSW**	S	**29.9**	**238**	**24**	**7**	**52**	**251**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0256 Boiler 2		**MSW**	S	**67.5**	**386**	**24**	**7**	**52**	**350**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0257 Boiler 3		**MSW**	S	**60.3**	**356**	**24**	**7**	**52**	**339**		**24**	**00:00**	**24:00**	**C-1**
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
Total				**157.7**	**980**									

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

TOSD: Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. **MSW** = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 2:

CRITERIA AIR POLLUTANTS
EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **VOC**

Equipment Description/ Registration No.	SCC Number	Fuel		Actual Emissions		Operating Schedule (Actual)				TOSD	Operating Schedule			Emissions Methods
				Tons/yr	Lbs/day	Hrs/dy	Dys/wk	Wk/yr	Days/yr	Lbs/dy	Hrs/dy	Start	End	
2-24-0255 Boiler 1		**MSW**	S	**0.5**	**4.0**	**24**	**7**	**52**	**251**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0256 Boiler 2		**MSW**	S	**0.7**	**4.0**	**24**	**7**	**52**	**350**		**24**	**00:00**	**24:00**	**C-1**
			F											
2-24-0257 Boiler 3		**MSW**	S	**0.7**	**4.1**	**24**	**7**	**52**	**339**		**24**	**00:00**	**24:00**	**C-1**
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
			S											
			F											
Total				**1.9**	**12.1**									

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

TOSD: Typical Ozone Season Day means a typical day of that period of the year during which conditions for photochemical conditions are most favorable, which is generally during sustained periods of direct sunlight and warm temperatures (April-September). This section needs to be completed only for VOC and NOx sources.

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. **MSW** = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 3: PM

EMISSIONS CERTIFICATION REPORT

Calendar Year: 2023

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886** Pollutant: **Particulate Matter**

Equipment Description/ Registration No.	SCC Number	Fuel		PM - Filterable		PM 10 - Filterable		PM 2.5 - Filterable		PM Condensable		Operation	Emissions Methods
				Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Tons/yr	Lbs/day	Days/yr	
2-24-0255 Boiler 1		**MSW**	S	**5.4**	**43**	**5.4**	**43**	**5.4**	**43**	**19**	**151.4**		**C-1/A-1**
			F										
2-24-0256 Boiler 2		**MSW**	S	**4.1**	**23.4**	**4.1**	**23.4**	**4.1**	**23.4**	**7.4**	**42.3**		**C-1/A-1**
			F										
2-24-0257 Boiler 3		**MSW**	S	**1.0**	**5.9**	**1.0**	**5.9**	**1.0**	**5.9**	**14.7**	**86.7**		**C-1/A-1**
			F										
			S										
			F										
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			S										
			F										
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			F										
			S										
			F										
			S										
			F										
			S										
			F										
Total				**10.5**	**384.4**	**10.5**	**384.4**	**10.5**	**384.4**	**41.1**	**280.4**		

S-Stack Emissions F-Fugitive Emissions Daily emissions (lbs/day) are lbs/operating day of source

Fuel: Include emissions for each fuel used. If more than one fuel is used, calculate and list emissions separately for each fuel. MSW = Municipal Solid Waste

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption technique
A4-Solid Absorption Technique
A5-Freezing Out technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering Judgment

C5-User calculated based on a State or local agency emission factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated based on standard

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Arsenic***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0005**	**0.004**	**0.00017**	**S/B**	
2-24-0256 Boiler 2	**0.0003**	**0.0017**	**0.00006**	**S/B**	
2-24-0257 Boiler 3	**0.0001**	**0.0006**	**0.00003**	**S/B**	
TOTALS	**0.0009**	**0.0063**	**0.00026**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Cadmium***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0004**	**0.003**	**1.39E-04**	**S/B**	
2-24-0256 Boiler 2	**0.0004**	**0.002**	**9.85E-05**	**S/B**	
2-24-0257 Boiler 3	**0.0001**	**0.001**	**5.05E-05**	**S/B**	
TOTALS	**0.0236**	**0.006**	**2.88E-04**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Chromium***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0014**	**0.0112**	**4.90E-04**	**S/B**	
2-24-0256 Boiler 2	**0.0015**	**0.0086**	**3.63E-04**	**S/B**	
2-24-0257 Boiler 3	**0.0014**	**0.0083**	**1.33E-04**	**S/B**	
TOTALS	**0.0043**	**0.0281**	**9.86E-04**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Copper***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0031**	**0.0265**	**0.0011**	**S/B**	
2-24-0256 Boiler 2	**0.0045**	**0.0262**	**0.0011**	**S/B**	
2-24-0257 Boiler 3	**0.0042**	**0.0262**	**0.0011**	**S/B**	
TOTALS	**0.0118**	**0.079**	**0.0033**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Dioxins/Furans**

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**5.6E-07**	**4.50E-07**	**1.98E-07**	**S/B**	
2-24-0256 Boiler 2	**8.0E-7**	**4.60E-07**	**1.96E-07**	**S/B**	
2-24-0257 Boiler 3	**7.6E-7**	**4.48E-07**	**1.96E-07**	**S/B**	
TOTALS	**2.12E-06**	**1.36E-05**	**5.90E-07**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Formaldehyde**

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.1973**	**1.57**	**0.07**	**S/B**	
2-24-0256 Boiler 2	**0.2863**	**1.64**	**0.07**	**S/B**	
2-24-0257 Boiler 3	**0.2708**	**1.59**	**0.07**	**S/B**	
TOTALS	**0.7539**	**4.8**	**0.210**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Hydrogen Chloride***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**3.1**	**24.7**	**1.11**	**S/B**	
2-24-0256 Boiler 2	**7.6**	**43.4**	**1.86**	**S/B**	
2-24-0257 Boiler 3	**7.3**	**43.1**	**1.88**	**S/B**	
TOTALS	**18**	**111.2**	**4.85**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP =Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Hydrogen Fluoride***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.14**	**1.12**	**0.050**	**S/B**	
2-24-0256 Boiler 2	**0.20**	**1.14**	**0.050**	**S/B**	
2-24-0257 Boiler 3	**0.27**	**1.59**	**0.050**	**S/B**	
TOTALS	**0.61**	**3.85**	**0.150**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Manganese***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0029**	**0.023**	**0.0010**	**S/B**	
2-24-0256 Boiler 2	**0.0053**	**0.030**	**0.0013**	**S/B**	
2-24-0257 Boiler 3	**0.0017**	**0.010**	**0.0004**	**S/B**	
TOTALS	**0.0099**	**0.063**	**0.0027**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Mercury***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0006**	**0.005**	**2.14E-04**	**S/B**	
2-24-0256 Boiler 2	**0.0007**	**0.004**	**1.71E-04**	**S/B**	
2-24-0257 Boiler 3	**0.0005**	**0.003**	**1.29E-04**	**S/B**	
TOTALS	**0.0018**	**0.012**	**5.14E-03**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 4: **Calendar Year: 2023**

TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Nickel***

Equipment Description/ Registration Number [1]	Actual Emissions			Control Device **	% Efficiency
	Tons/yr	Lbs/day	Lbs/hour		
2-24-0255 Boiler 1	**0.0016**	**0.023**	**5.53E-04**	**S/B**	
2-24-0256 Boiler 2	**0.0023**	**0.0131**	**5.73E-04**	**S/B**	
2-24-0257 Boiler 3	**0.0022**	**0.0130**	**3.73E-04**	**S/B**	
TOTALS	**0.0061**	**0.0388**	**1.50E-03**		

*Please attach all calculations.

*See Attachment 1 for the minimum reporting values

**Control Device
S = Scrubber
B = Baghouse
ESP = Electrostatic Precipitator
A = Afterburner
C = Condenser
AD = Adsorbtion
O = Other

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 5

Calendar Year: 2023

BILLABLE TOXIC AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID#: **24-510-01886**

Chemical Name	CAS Number		Actual Emissions Tons/year	Lbs/day	Lbs/hr		Estimation Method
carbon disulfide	75-15-0	S					
		F					
carbonyl sulfide	463-58-1	S					
		F					
chlorine	7782-50-5	S					
		F					
cyanide compounds	57-12-5	S					
		F					
hydrochloric acid	7647-01-0	S	18.0	111.2	4.85		A1, C1
		F					
hydrogen fluoride*	7664-39-3	S	0.53	3.38	0.17		A1, C1
		F					
methyl chloroform	71-55-6	S					
		F					
methylene chloride	75-09-2	S					
		F					
perchloroethylene	127-18-4	S					
		F					
phosphine	7803-51-2	S					
		F					
titanium tetrachloride	7550-45-0	S					
		F					
TOTALS			18.53	114.58	5.02		

S-Stack Emissions F-Fugitive Emission Daily emissions (lbs/day) are lbs/operating day of the source

Emission Estimation Method

A1-U.S. EPA Reference Method
A2-Other Particulate Sampling Train
A3-Liquid Absorption Technique
A4-Solid
A5-Freezing Out Technique
A9-Other, Specify

C1-User calculated based on source test or other measurement
C2-User calculated based on material balance using engineering knowledge of the process
C3-User calculated based on AP-42
C4-User calculated by best guess/engineering judgment
C5-User calculated based on a State or local agency factor
C6-New construction, not operational
C7-Source closed, operation ceased
C8-Computer calculated bsed on standards

This form to include only the eleven chemicals identified

PLEASE NOTE: Be sure to attach all data and calculations necessary to support the emissions figures shown above.

See Attachment 1 for minimum reporting values

*** Hydrogen flouride results non-detect**

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore** Facility ID: **24-510-01886** Pollutant: **Methane**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**0.5**	**4.0**	**0.17**
2-24-0256 Boiler 2	**0.7**	**4.0**	**0.16**
2-24-0257 Boiler 3	**0.6**	**3.5**	**0.16**
TOTALS	**1.8**	**11.5**	**0.49**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore** Facility ID: **24-510-01886** Pollutant: **Carbon Dioxide**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**184,550**	**1470520**	**65,551**
2-24-0256 Boiler 2	**276,434**	**1579624**	**66,683**
2-24-0257 Boiler 3	**251,955**	**1486462**	**63,641**
TOTALS	**712,940**	**4536607**	**194,875**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore** Facility ID: **24-510-01886** Pollutant: **Nitrous Oxide**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**8.3**	**70.5**	**2.938**
2-24-0256 Boiler 2	**12.2**	**70.5**	**2.939**
2-24-0257 Boiler 3	**11.5**	**69.8**	**2.908**
TOTALS	**31.9**	**210.8**	**8.79**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Hydrofluorocarbons**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**Not Emitted**		
2-24-0256 Boiler 2			
2-24-0257 Boiler 3			
TOTALS	**0**	**0**	**0**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Perfluorocarbons**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**Not Emitted**		
2-24-0256 Boiler 2			
2-24-0257 Boiler 3			
TOTALS	**0**	**0**	**0**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

FORM 6: Greenhouse Gases **Calendar Year: 2023**

GREENHOUSE GAS AIR POLLUTANTS

EMISSIONS CERTIFICATION REPORT

Facility Name: **Wheelabrator Baltimore, L.P.** Facility ID: **24-510-01886** Pollutant: **Sulfur hexafluoride**

Equipment Description/ Registration Number [1]	Actual Emissions		
	Tons/yr	Lbs/day	Lbs/hour
2-24-0255 Boiler 1	**Not Emitted**		
2-24-0256 Boiler 2			
2-24-0257 Boiler 3			
TOTALS	**0**	**0**	**0**

This form must be used to report Greenhouse gas emissions:

- carbon dioxide (CO_2)
- methane (CH_4)
- nitrous oxide (N_2O)
- hydrofluorocarbons (HFCs)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF_6)

*Use a separate form for each pollutant.

*Please attach all calculations

[1] Emissions must be broken down by equipment registration number (ex. 9-0076, 9-0077)

Wheelabrator Baltimore	Annual Emissions Calculations															
	2023 Data Shaded															
Plant:	Wheelabrator Baltimore, LP															
	Unit 1	Unit 2	Unit 3	Total												
Tons processed	162,653	234,935	221,204	618,792	Ops Stats											
Total Operating Hours	5,718	8,291	7,918	21,927	> of CEMS or Opstats											
Steam Flow Avg (klbs/hr)	189.3	189.4	187.3		Ops Stats											
Stack test air flow (dscfm 7% O2)	75,353	74,569	73,776		Stack Test											
Stack Test Steam Flow Average klb/hr	192	192	192		Stack Test											
Natural Gas Usage (Therms)	9,884	14,461	13,624	37,969	Ops Stats											
Availability	65%	95%	90%													
	Annual CEM Avg.-ppm 7% O2			Data Source												
SO2 (MW=64)	14	22	21	CEMS	10.59	16.50	15.44	42.53	238	386	352	976	29.9	67.5	59.6	157.0
NOx (MW=46)	129	126	130	CEMS	69.36	67.09	68.70	205.15	1,558	1,568	1,565	4,691	195.5	274.4	265.3	735.2
CO (MW=28)	22	14	14	CEMS	7.06	4.45	4.44	15.95	159	104	101	364	19.9	18.2	17.1	55.2
	Stack Test Ave-ppm7% O2 Outlet						HCl+HF=	5.000			HCl+HF=	114.58			HCl+HF=	18.53
HCl (MW=36.46)	2.6	4.4	4.5	Stack Test	1.11	1.86	1.88	4.85	24.7	43.4	43.1	111.2	3.1	7.6	7.3	18.0
HF (MW=20)***	<0.20	<0.20	<0.20	Stack Test	0.050	0.050	0.050	0.150	1.12	1.14	1.12	3.38	0.14	0.20	0.19	0.53
						lbs/hr				lbs/day				Tons per Year		
Dioxin ng/dscm 7%O2	0.70	0.70	0.70	Stack Test	1.98E-07	1.96E-07	1.93E-07	5.87E-07	4.50E-06	4.60E-06	4.42E-06	1.35E-05	5.60E-07	8.00E-07	7.50E-07	2.11E-06
Stack Test																
Steam flow Avg klb/hr	192	192	192	Stack Test						lbs/day				Tons per Year		
PM/PM10 (filterable)- lbs/hr	1.93	1.00	0.27	Stack Test					43.0	23.4	5.9	72.4	5.4	4.1	1.0	10.5
PM (condensable) - lbs/hr	6.75	1.8	3.8	Stack Test		lbs/hr			151.4	42.3	86.7	280.4	19.0	7.4	14.7	41.1
VOC (THC as Methane) ppm7%	0.88	0.88	0.88	Stack Test	0.170	0.160	0.160	0.490	4.0	4.0	3.5	11.5	0.50	0.70	0.60	1.8
Stack Test																
Steam flow Avg. klb/hr	192	192	192	Plant						lbs/day				Tons per Year		
Cadmium - lbs/hr	1.39E-04	9.85E-05	5.05E-05	2.88E-04					0.003	0.002	0.001	0.006	0.0004	0.0004	0.0002	0.0010
Lead - lbs/hr	6.15E-03	1.14E-03	4.08E-04	7.70E-03					0.138	0.027	0.009	0.174	0.0173	0.0047	0.0016	0.0236
Mercury - lbs/hr	2.14E-04	1.71E-04	1.29E-04	5.14E-04					0.005	0.004	0.003	0.012	0.0006	0.0007	0.0005	0.0018
Stack Test																
Other metals - Stack Test				Plant						lbs/day				Tons per Year		
Arsenic - lbs/hr	1.67E-04	6.32E-05	3.30E-05	2.63E-04					0.0040	0.0017	0.0006	0.0063	0.0005	0.0003	0.0001	0.0009
Chromium - lbs/hr	4.90E-04	3.63E-04	1.33E-04	9.86E-04					0.0112	0.0086	0.0083	0.0281	0.0014	0.0015	0.0014	0.0043
Nickel - lbs/hr	5.53E-04	5.73E-04	3.73E-04	1.50E-03					0.0127	0.0131	0.0130	0.0388	0.0016	0.0023	0.0022	0.0061
Others				Plant		lbs/hr		Plant		lbs/day				Tons per Year		
Copper - ug/dscm7%	3.91	3.91	3.91	3.910	0.0011	0.0011	0.0011	0.0033	0.0247	0.0257	0.0248	0.075	0.0031	0.0045	0.0042	0.0118
Formaldehyde - ppm7%	0.193	0.193	0.193	0.193	0.070	0.070	0.070	0.210	1.57	1.64	1.59	4.80	0.1973	0.2863	0.2703	0.7539
Manganese - ug/dscm7%	3.60	4.60	1.60	3.267	0.0010	0.0013	0.0004	0.0027	0.023	0.030	0.010	0.063	0.0029	0.0053	0.0017	0.0099
						lbs/hr		Plant		lbs/day		Plant		Tons per Year		Plant
CO2 Emisssion From eGGRT					64551	66683	63641	194875	1470520	1579624	1486462	4536607	184550	276434	251955	712940

Others	Example Calculations:
Cu Millbury 2019-22	CEM and Stack Test ppm @ 7% O2 Pollutants: lbs/hr = (ppm@7%O2/1000000)*(Airflow dscfm7%O2)*60*(Mol. Wt./385.3) where Airflow = Stack Test value
Formaldyehyde (Hudson Falls 2023 Results ND 1/2 ND used)	Dioxin ng/dscm @ 7% O2: lbs/hr = (ng/dscm@7%O2)*(Airflow dscfm7%O2)*60/(453.59E9ng/lb*35.32 dscf/dscm) where Airflow = Stack Test value
	Stack Test lb/hr Pollutants: lbs/hr = Stack Test Value
U1 condensible ave 2022-2023 as high urea feed during 2023 test	tons/year = lbs/hr*Operating Hours*(Annual Steam Flow Avg/Stack Test Steam Flow)/2000
	lbs/day = (tons/yr) * (2000 lb/ton) / Operating days

Unit 1	Unit 2	Unit 3
Equivalent Operating Days		
251	350	339