Climate Leadership and Community Protection Act (CLCPA) Analysis

Air State Facility (ASF) Permit Modification and Renewal Application

DEC ID # 9-2911-00036

Prepared for
The Goodyear Tire & Rubber Company

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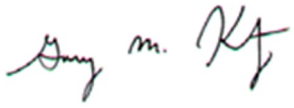
The Goodyear Tire & Rubber Company Niagara Falls Facility

0771139



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Acronyms and ABBREVIATIONS

Acronym	Description
AGC	Annual Guideline Concentrations
ASF	Air State Facility Permit
CFR	Code of Federal Regulations
CH_4	Methane
CLCPA	Climate Leadership and Community Protection Act
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
DAC	Disadvantaged Community
DAR-21	Division of Air Resources (21: NYSDEC Program Policy, “The Climate Leadership and Community Protection Act and Air Permit Applications”, dated December 14, 2022)
DEP 24-1	Division of Environmental Permits (24-1: NYSDEC Program Policy, “Permitting and Disadvantaged Communities,” dated May 8,2024)
eGRID	Emissions & Generation Resource Integrated Database
ERM	ERM Consulting & Engineering, Inc.
GHG	Greenhouse Gas
GWP	Global Warming Potential
HAP	Hazardous Air Pollutant
HTAC	High Toxicity Air Contaminant
kWh	Kilowatt-hours
lb/yr	Pounds per year
LED	Light-emitting diode
MACT	Maximum Achievable Control Technology
MT	Metric tonnes
N_2O	Nitrous Oxide
NYCRR	New York Code, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation

Acronyms and ABBREVIATIONS

O-T	ortho-Toluidine
PM	Particulate Matter
POTW	Publicly Owned Treatment Works
PTE	Potential-to-Emit
PVC	Polyvinyl Chloride
RTO	Regenerative Thermal Oxidizer
SGC	Short-term guideline concentration
tpy	Tons per year
USEPA	United States Environmental Protection Agency
VFD	Variable Frequency Drives
VOC	Volatile Organic Compounds

1. FACILITY OVERVIEW

The Goodyear Tire & Rubber Company owns and operates a manufacturing site located at 5500 Goodyear Drive in the City of Niagara Falls, New York (Facility). The Facility was originally built in 1946 for polyvinyl chloride (PVC) manufacturing and began production of rubber antioxidant products in 1957. Although PVC production was discontinued in 1996, the Facility continued to manufacture an antioxidant product. The Facility is located on 28 acres of land encompassing 210,000 square feet of building space that contains three reactor systems and two finishing lines.

2. SCOPE

As part of the Air State Facility (ASF) Permit (DEC Permit ID No. 9-2911-00036/00151) renewal and modification application (Updated September 03, 2025), the New York State Department of Environmental Conservation (NYSDEC) requires Goodyear to prepare and submit a Climate Leadership and Community Protection Act (CLCPA) analysis that includes information regarding the renewal and modification of the equipment changes and emission calculations, an AERMOD air dispersion modeling protocol, a Public Participation Plan (PPP) pursuant to CP-29, and an analysis following the procedures described in Division of Air Resources (DAR) Program Policy DAR-21 and Division of Environmental Permits (DEP) Program Policy DEP-24-1. This CLCPA analysis fulfills the requirement for Goodyear to submit a CLCPA addressing Section 7(2) and Section 7(3) as discussed in the following sections.

3. REGULATORY BACKGROUND

3.1 AIR PERMIT

The Facility has an ASF Permit, which became effective on June 15, 2009, and was modified on April 21, 2011, with no expiration date assigned by the NYSDEC. Permit conditions cap facility-wide potential emissions to less than major source thresholds through production limits. Specifically, volatile organic compounds (VOCs) are limited to less than 50 tons per year (tpy), total hazardous air pollutants (HAPs) are limited to less than 25 tpy, and o-xylene is limited to less than 10 tpy. Emissions testing correlates these limits with a production limit of 3,450 batches annually in elimination tanks D1 and D2.

Goodyear is seeking to modify and renew the Facility's existing ASF Permit. In 2018, the NYSDEC DAR requested Goodyear apply to renew the ASF Permit in accordance with regulatory updates to Title 6 of the New York Code, Rules, and Regulations (6 NYCRR) Part 201 to establish 10-year term limits to ASF permits issued by the NYSDEC.

On January 14, 2025, Goodyear entered into an Order on Consent (Order No. R9-20241125-128, hereafter referred toas the "Order") with the NYSDEC, requiring Goodyear to submit an Air Pollution Control Engineering Study (the "Study") to the NYSDEC within 60 days of the effective date of the Order. The Order required the Study to include the details and schedule needed for the

design, procurement, installation, commissioning, and performance emissions testing of the upgraded emission sources and permanent control technology.

The Study conducted by Goodyear proposed to replace the existing Tri-Mer Whirl Wet® Scrubber with a new scrubber and incorporate a new Regenerative Thermal Oxidizer (RTO) into the air emissions control systems for the equipment that exhausts through the current scrubber and to redirect the air emissions from Elimination Tank No. 2 through the RTO as well. Once these upgraded air emissions control systems are in place, the resultant facility-wide air emissions profile from the Goodyear Facility are expected to demonstrate compliance with the regulatory requirements of New York Part 212 for Air Emissions from Process Sources.

The Order also requires Goodyear to submit to the NYSDEC, within 45 days of the Department's approval of the Study, an application including the information regarding the renewal and modification of the air permit detailing equipment changes and emission calculations, an AERMOD modeling protocol, a Public Participation Plan pursuant to CP-29, and a CLCPA analysis following the procedures described in DAR 21 and DEP 24-1.

3.2 CLCPA

In July 2019, Governor Andrew Cuomo signed the CLCPA, Chapter 106 of the Laws of 2019. When issuing permits, Section 7(2) of the CLCPA requires all state agencies to consider "whether such decisions are inconsistent with, or will interfere with, the attainment of the statewide greenhouse gas (GHG) emission limits established in Article 75 of the environmental conservation law." On 14 December 2022, the NYSDEC issued the final version of NYSDEC Program Policy DAR 21, which provides guidance for preparing a CLCPA analysis in support of an air permit application.

For purposes of the CLCPA, GHG emissions are calculated on a twenty-year global warming potential ("GWP20") and statewide GHG emissions including upstream out-of-state GHG emissions associated with the generation of electricity imported into the State, or the extraction, transmission, and use of fossil fuels imported into the State, and any downstream emissions attributable to the project.

Under section 7(3) of the CLCPA, the NYSDEC is required to "prioritize reductions of GHG emissions and co-pollutants in Disadvantaged Communities (DAC)" and in considering and issuing permits, "shall not disproportionately burden disadvantaged communities". If a facility is located in or potentially impacts a DAC, it is understood that the CLCPA analysis should provide calculations for all co-pollutants. Under § 75-0101 of the Environmental Conservation Law, "co-pollutants" are defined as "hazardous air pollutants produced by GHG emission sources", where a "greenhouse gas emission source" is defined as "any anthropogenic source or category of anthropogenic sources of greenhouse gas emissions, determined by the department: (a) whose participation in the program will enable the department to effectively reduce greenhouse gas emissions; and (b) that are capable of being monitored for compliance." On May 8, 2024, the NYSDEC issued the final version of NYSDEC Program Policy DEP 24-1, which outlines the analysis required for permit applications associated with facilities located in a disadvantaged community.

4. CLCPA ANALYSIS

In accordance with the NYSDEC, the following sections detail the requirements of the CLCPA analysis.

4.1.1 SECTION 7(2) DAR-21

Per Section 7(2) DAR-21, this analysis addresses "any new or modified emission sources that have the potential-to-emit GHG, including increases and decreases in emissions of GHG from existing equipment. In addition, the analysis includes any upstream, downstream, and indirect emissions known to be attributable to the project, including upstream out-of-state emissions from fossil fuel production, transmission, and imported electricity."

4.1.2 SECTION 7(3) DEP 24-1

In accordance with CLCPA Section 7(3) DEP 24-1, this analysis also includes review of "Increases in GHG emissions or co-pollutants resulting from a project associated with any new, modified, or renewed emission sources, including those from stationary or mobile sources directly related to and essential to the proposed action, and those from existing equipment or facilities…". The requested renewal does not involve any new sources of GHGs or co-pollutants or any increases in GHGs or co-pollutants. This CLCPA analysis has been performed for all sources of GHG emissions and co-pollutants at the Facility.

4.2 CLCPA EMISSION CALCULATIONS

The following sections assess the Facility's greenhouse gas emissions as carbon dioxide equivalents (CO_2e) (based on GWP20 factors included in Part 496) and its consistency with the CLCPA pursuant to CLCPA Section 7(2); and assess the Facility's co-pollutant emissions pursuant to CLCPA Section 7(3).

Because the Goodyear Facility is located in a DAC, consistent with DEP 24-1, calculations were completed for co-pollutants (Hazardous Air Pollutants). Emissions of all co-pollutants were calculated on a potential-to-emit (PTE) basis, past actual basis, and future projected annual emissions basis.

4.2.1 GHG EMISSIONS

The Facility's GHG emissions are associated with building and process heating, propane forklifts, off-road vehicle diesel, and vehicle fleet gasoline. Per DAR-21, "the past actual emissions are defined as the highest 24-month average GHG emissions during the five years preceding the date the permit application was received unless another period is more representative". Based on this, the five-year period of calendar years 2020 – 2024 was reviewed and the baseline period was determined to be 2021-2022 with average emissions of 8,621 MT of CO_2e. Table 1 shows the summary of greenhouse emissions from different fuel sources at the Niagara Falls Facility.

All calculations of CO_2e are based on the 6NYCRR 496 GWP20 factors.

TABLE 1 ACTUAL ONSITE EMISSIONS OF GHGS (2020-2024)

YEAR	Fuel	Quantity (Gas/Fuel) MMBtu/yr	Direct Onsite	Upstream	Total
			CO_2e Emissions MT/yr	CO_2e Emissions MT/yr	CO_2e Emissions MT/yr
2020	Natural Gas	40,808	2,535	3,369	5,904
	Propane	249			
	Gasoline	10			
	Diesel	14			
2021	Natural Gas	52,578	4,966	3,850	8,816
	Propane	296			
	Gasoline	10			
	Diesel	28			
2022	Natural Gas	48,794	4,731	3,695	8,427
	Propane	318			
	Gasoline	10			
	Diesel	24			
2023	Natural Gas	48,364	4,704	3,369	8,073
	Propane	294			
	Gasoline	18			
	Diesel	44			
2024	Natural Gas	44,219	4,447	3,508	7,955
	Propane	351			
	Gasoline	13			
	Diesel	14			

4.3 FACILITY POTENTIAL TO EMIT GREEHOUSE GAS EMISSIONS

Per the requirements of DAR-21 emissions of GHGs were calculated on a PTE basis, including upstream and direct emissions. The PTE calculations include the estimated maximum natural gas

usage for a new RTO that will be installed in early 2026. Table 2 provides the summary of calculated PTE GHGs. Detailed calculations of GHG PTE are provided in Appendix B-1.

TABLE 2 PTE OF GHG EMISSIONS

Fuel Type	Potential to Emit GHGs (MT of CO_2e/year)
Natural Gas	11,024
Propane	31
Gasoline	3
Diesel	4

4.4 CY2030 AND CY2050 PROJECTIONS OF GHG EMISSIONS

For calendar year 2030, Goodyear expects that its GHG emissions will remain consistent with the current year GHG emissions profile, with minor adjustments that will reduce the actual GHG emissions as energy reduction initiatives and projects are implemented.

For calendar year 2050, Goodyear expects that its GHG emissions from the Niagara Falls facility will continue to be reduced as the Company implements its net-zero GHG emissions and sustainability initiatives across its global footprint, including initiatives related to operations at the Niagara Falls Facility.

5. IDENTIFICATION OF ALTERNATIVES AND MITIGATION

Goodyear is committed to lowering GHG emissions and energy consumption through various mitigation and reduction projects. In 2021, Goodyear announced its climate ambition, which includes a goal to reach net-zero Scope 1, 2 and certain Scope 3 greenhouse gas emissions by 2050, as well as a commitment to achieve near-term science-based targets by 2030, including reducing Scope 1 and 2 emissions by 46 percent and certain Scope 3 emissions by 28 percent, as compared to a 2019 baseline. Goodyear publishes an annual Corporate Responsibility Report — charting the company's progress towards its sustainability goal. This is something the company has done since 1996. The most recent Corporate Responsibility Report and more information on Goodyear's commitment to sustainability can be found at Goodyear.com/responsibility. The initiatives described below related to the Niagara Falls Facility reinforce that commitment.

5.1 RECENT AND ONGOING MITIGATION EFFORTS

Goodyear implemented a re-lamping program beginning in 2019 to replace facility-wide light bulbs with light-emitting diode (LED) lamps to improve energy efficiency and lower overall carbon emissions. Re-lamping in the warehouse was completed in 2023 by replacing 4-foot florescent bulbs with LED lamps. Seventy-five percent (75%) of the metal halide bulbs in the production area were replaced with LED lamps and in some cases the lighting fixtures were replaced. Outside lighting is currently in the process of being replaced with LED alternatives. To date Goodyear has replaced 1,300 4-foot fluorescent light bulbs with LED lamps, 60 High Bay metal halide bulbs with

LED fixtures and lamps, and 35 metal halide flood lights with LED flood lights. The re-lamping initiative is ongoing with expected completion in 2028.

Electric powered forklifts have become increasingly more energy efficient, and as powerful as propane-fueled forklifts. Currently, there are five forklifts used in the facility warehouse that are powered by propane, and 2 battery-powered forklifts. Current propane use is approximately 400, 20-pound bottles per year. However, Goodyear has implemented a program to replace older forklifts that use propane with electric forklifts whenever each forklift is permanently retired. Replacing the propane operated forklifts with battery powered forklifts will contribute to overall reduction in facility-wide GHG emissions.

Goodyear is in the process of restoring the main water basin to restore efficiency in treating water before it is sent out to the local utility. The project includes the installation of more energy efficient pumps, restoring the filter system and preparing and implementing an annual maintenance plan to optimize system performance. Additionally, the pumps will maximize the water filtration process resulting in cleaner wastewater that is discharged to the local Publicly Owned Treatment Works (POTW).

5.2 HISTORICAL PROJECTS THAT REDUCED GHG EMISSIONS

Leaks in compressed air systems can represent a significant source of wasted energy and create operational inefficiencies. Goodyear implemented a leak study of the facility air compressor pumps and lines in 2022. The project scope was to identify and repair potential pump and piping leaks that can contribute to energy inefficiencies. Compressor piping leaks were discovered at various locations throughout the facility. Goodyear implemented corrective actions and repaired the leaks resulting in energy use reductions. Also, a continuous run compressor was replaced with a higher efficiency-on demand style resulting in additional increased energy efficiencies.

5.3 PROJECTS UNDER EVALUATION TO REDUCE GHG EMISSIONS

Goodyear is currently evaluating cooling tower improvement options to maximize efficiency while reducing energy consumption and ultimately its carbon footprint. Options being considered include implementing variable frequency drives (VFDs) for fans and pumps to minimize continuous “full power” operation, evaluating different types of storage tanks to use for the project, new type of piping, and a new storage tank. If implemented, completion of this project can be expected by 2028.

6. SECTION 7(3) EVALUATION

Goodyear is located within a DAC and must demonstrate that the renewal and modification of the ASF permit will not have a disproportionate impact on the DAC.

Currently, Goodyear is in the process of installing a new wet scrubber to replace the current Tri-Mer scrubber, as well as a new RTO. Both Elimination Tank #2 and the centrifuge of Emission Unit U-000N3 will be routed to the new scrubber and RTO. The new scrubber is designed to control particulate emissions by 90%, and the RTO is expected to destroy 90% of organic emissions from these sources.

In addition to the replacement of the current Tri-Mer Whirl-Wet Scrubber and installing a new add-on RTO, Goodyear installed a temporary carbon adsorption system on the exhaust gases from the Elimination Tank No. 2 that will continue to serve as an interim control measure until such time that the permanent solution (i.e., the replacement wet scrubber and RTO system) is installed and operational. This interim carbon control system, operational since April 10, 2025, is currently achieving greater than 90% control efficiency of the exhaust gases from Elimination Tank No. 2.

The installation of the interim air emissions control system and the permanent air emissions control systems will reduce the impacts and any disproportionate burden on the surrounding DAC.

This section quantifies the co-pollutants emitted at the Facility on past actual, potential-to-emit (PTE), and future bases.

6.1 EMISSIONS OF CO-POLLUTANTS FROM GHG SOURCES

For each stationary source type at the Facility that emits a GHG, calculations were made to determine the emissions of co-pollutants on past actual, PTE, and future bases. Appendix B includes details of the calculated PTE values for individual HAPs, for each fuel type.

The Facility currently operates natural gas burners to heat Dowtherm, a heat transfer fluid, which is used to provide efficient process heat. The Facility uses propane powered forklifts, as well as gasoline and diesel-powered motor vehicles (Note that no HAP emission factors have been published specifically for gasoline or diesel motor vehicles). The new RTO for control of HAPs and VOCs will be natural gas fueled and is rated at a maximum heat input of 4 MMBtu/hr. Although the RTO will increase HAPs from fuel combustion, the amount of process VOC and HAP destruction is far larger (See Table 5, “Future Emissions” row).

TABLE 3 CO-POLLUTANT PTE (GHG SOURCES)

Fuel Type	Potential to Emit Co-Pollutants (HAPs) (lbs/year)
Natural Gas	217.19
Propane	0.65
Gasoline	0.07
Diesel	0.17

TABLE 4 CO-POLLUTANT ACTUAL EMISSIONS (GHG SOURCES)

Fuel Type	Actual Co-Pollutants (HAPs) (lbs/year)
Natural Gas	90.31

Fuel Type	Actual Co-Pollutants (HAPs) (lbs/year)
Propane	0.59
Gasoline	0
Diesel	0.10

6.2 EMISSIONS OF CO-POLLUTANTS FROM NON-GHG SOURCES

Goodyear's emissions also include HAPs from sources that do not emit GHGs. The manufacturing processes at the Facility produce emissions of aniline, hydroquinone, phenol, o-toluidine, o-xylene, and xylidine.

At present, VOC and HAP emissions from Elimination Tank No. 2 are being controlled by an interim activated carbon system. Goodyear is in the process of designing and purchasing a regenerative thermal oxidizer (RTO), that will replace the activated carbon system. Installation of the RTO is planned for early 2026 and is expected to reduce emissions of HAPs and VOCs by at least 90%. As shown in Table 5, the RTO is expected to reduce overall facility-wide HAP emissions by approximately 6,000 lbs/year.

TABLE 5 CO-POLLUTANT EMISSIONS (PROCESS SOURCES)

Calculation Type	Co-Pollutants (HAPs) (lbs/year)
Potential to Emit	18,096
Actual Emissions	12,276
Future Emissions	6,814

7. CONSISTENCY WITH CLCPA GOALS

Renewal and modification of the Air State Facility Permit for The Goodyear Tire & Rubber Company's Niagara Falls facility includes calculations and estimates of GHG, co-pollutant and other federally regulated air contaminant emissions that are subject to and will continue to be compliant with the New York State and Federal-level Clean Air Act regulations (as authorized under the USEPA-delegated authority to the NYSDEC). Through New York's Environmental Conservation Law, which is enacted under the New York State Legislature's authority to protect public health and safety and the environment, the GHGs, co-pollutants, and other federally regulated air contaminants do not pose a disproportionate burden on the adjacent DAC and will not interfere with the CLCPA's statewide goals, or result in a disproportionate burden on the disadvantaged community.

Additionally, Goodyear will comply with the regulations and requirements related to the CLCPA once they are promulgated. The new interim air emissions control system and the planned permanent air emissions control devices, once installed and operational, will result in a significant decrease in the amount of HAP, HTAC, and VOC emissions from the facility, further reducing the impacts to the surrounding DAC.

8. REFERENCES

Code of Federal Regulations. 40 CFR Part 98 – Mandatory Greenhouse Gas Reporting: Tables C-1 and C-2.

New York State Department of Environmental Conservation. DAR-21: The Climate Leadership and Community Protection Act and Air Permit Applications. Christopher M. LaLone, PE.; 12/14/2022.

New York State Department of Environmental Conservation. 6 NYCRR Part 496 Statewide Greenhouse Gas Emission Limits. Albany, NY.

New York State Department of Environmental Conservation. CP-49: Climate Change and DEC Action. Commissioner Basil Seggos, 12/14/2022.

New York State Department of Environmental Conservation, DEP-24-1: Permitting and Disadvantaged Communities under the Climate Leadership and Community Protection Act. Danel Whitehead. May 8, 2024. Albany, NY.

EMISSION SOURCES

Natural Gas	MAXIMUM HEAT INPUT (MMBtu/hr)	*COMMENTS*
RTO	4	*Maximum Heat Input = 4,000 scfh x 1,000 Btu/scf HHV of 1,000 Btu/scf; Max flow of 4,000 scfh* *RTO has not been installed as of application submittal. The expected start of construction is in the 2nd half of 2025.*
Dowtherm Burner No. 1	3.1	
Dowtherm Burner No. 2	3.3	
Dowtherm Burner No. 3	3.0	
TOTAL	13.40	

Propane	MAXIMUM HEAT INPUT (MMBtu/yr)	*COMMENTS*
	351	Based on the highest propane usage of the past 5 years (occurred in 2024)
TOTAL	351	

Gasoline	MAXIMUM HEAT INPUT (MMBtu/yr)	*COMMENTS*
	18	Based on the highest gasoline usage of the past 5 years (occurred in 2023)
TOTAL	18	

Diesel	MAXIMUM HEAT INPUT (MMBtu/yr)	*COMMENTS*
	44	Based on the highest diesel usage of the past 5 years (occurred in 2023)
TOTAL	44	

POTENTIAL TO EMIT GHG's FOR IDENTIFIED SOURCES FIRING NATURAL GAS

0 Process Information

		COMMENTS
Maximum Potential Operating Hours (hrs/yr) =	8760	
Maximum Heat Input for Natural Gas (MMBtu/hr) =	13.40	
Maximum Heat Input for Natural Gas (MMBtu/yr) =	117,384	*= (Maximum Heat Input Rating for Boilers, MMBtu/hr) x (Maximum Potential Operating Hours, hrs/yr)*

1 PTE - "Upstream" GHG Emissions Resulting from Extraction, Production & Transmission of Natural Gas

	GREENHOUSE GASES				*NOTES*
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	
Upstream Emission Factor (g/MMBtu) [1]	12,549	337	0.14	40,877	
Upstream Emission Factor (lb/MMBtu)	27.641	7.42E-01	3.1E-04	*90.037*	*= (Upstream Emission Factor, g/MMBtu) x [lb / 454 g]*
Upstream Emissions (lb/yr)	3.24E+06	8.71E+04	3.6E+01	1.06E+07	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Upstream EF, lb/MMBtu)*
Upstream Emissions (ton/yr)	1,622.30	43.57	0.02	*5.28E+03*	*= (Upstream Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	1	84	264	---	
Upstream Emissions as CO2e (tons/yr)	1,622	3,660	5	5,287	*= (Upstream Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

2 PTE - Direct GHG Emissions from Combustion of Natural Gas

	GREENHOUSE GASES				*NOTES*
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	
Combustion Emission Factor (kg/MMBtu) [1]	53.06	1.0E-03	1.0E-04	---	
Combustion Emission Factor (lb/MMBtu)	116.7	2.2E-03	2.2E-04	---	*= (Combustion Emission Factor, kg/MMBtu) x [2.2 lb / kg]*
Combustion Emissions (lb/yr)	1.37E+07	2.6E+02	2.6E+01	---	*= (Maximum Natural Gas Usage, MMBtu/yr) x (Combustion EF, lb/MMBtu)*
Combustion Emissions (ton/yr)	6.85E+03	1.3E-01	1.3E-02	---	*= (Combustion Emissions, lb/yr) x [ton/ 2000 lb]*
20-yr Global Warming Potential (GWP) [2]	1	84	264	---	
Combustion Emissions as CO2e (tons/yr)	6,851.23	10.85	3.41	6,865.49	*= (Combustion Emissions, ton/yr) x (20-yr GWP)*

[1] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

[2] *GWP values from 6 NYCRR 496.5. (NOTE: These values reflect the 20-year GWP values for each compound. These values differ from the 100-yr GWP values that are used for permitting and NSR evaluations).*

3 PTE - Total GHG Emissions from Use of Natural Gas

	GREENHOUSE GASES				*NOTES*
	CO_2	CH_4	N_2O	TOTAL CO2e (20 yr GWP)	
Total Emissions (tons/yr)	8,474	44	3.1E-02	---	*= (Upstream GHG Emissions, tons/yr) + (Direct GHG Emissions, tons/yr)*
Total Emissions as CO2e (tons/yr)	8,474	3,670	8	12,152	= *(Upstream*
Total Emissions as CO2e (metric tonnes/yr)	*7,687*	*3,330*	*7*	*11,024*	*= (Total*

4 PTE - Emissions of Co-Pollutants (Hazardous Air Pollutants) from Combustion of Natural Gas

	POTENTIAL TO EMIT FOR CO-POLLUTANTS (= HAZARDOUS AIR POLLUTANTS)																
	TOTAL POM	ormaldehyd	Benzene	Naphthalene	Toluene	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	TOTAL HAPs [2]
Emission Factor (lb/MMBtu) [1]	6.83E-07	7.35E-05	2.06E-06	5.98E-07	3.33E-06	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	#####	3.73E-07	2.55E-07	####	2.35E-08	---
Emissions (lb/yr)	8.01E-02	8.63E+00	2.42E-01	7.02E-02	3.91E-01	2.07E+02	2.30E-02	1.38E-03	1.27E-01	1.61E-01	9.67E-03	#####	4.37E-02	2.99E-02	####	2.76E-03	####
Emissions (ton/yr)	4.01E-05	4.32E-03	1.21E-04	3.51E-05	1.96E-04	1.04E-01	1.15E-05	6.90E-07	6.33E-05	8.06E-05	4.83E-06	####	2.19E-05	#####	####	1.38E-06	0.11

[1] *Emission factors (lb/MMBtu fuel input) taken from AP-42, Section 1.4 ("Natural Gas Combustion"),Tables 1.4-2, 1.4-3 & 1.4-4.*

[2] *Naphthalene is a listed HAP as well as part of "TOTAL POM". For the computation of "TOTAL HAPs", the value for "Naphthalene" as a listed HAP has been excluded so that Naphthalene is not double-counted.*

2020 Combustion Emissions (GHG and Co-Pollutants)

2020 Facility-Wide Fuel Usage			
Fuel Type	Source	MMBtu	Gallons
Natural Gas	Facility Wide NG Usage	40,808	
Propane	Facility Wide Propane Usage	249	
Diesel	Off-road Diesel Usage	14	100
Gasoline	Vehicle Gas Usage	10	80

Facility-Wide Upstream Actual GHG Emissions[1]				
Natural Gas	CO_2	CH_4	N_2O	
Upstream Emission Factor (g/MMBtu)	12,549	337	0.1400	
Upstream Emissions (MT)	512	14	0.0057	
Propane				
Upstream Emission Factor (g/MMBtu)	16,429	119	0.2700	
Upstream Emissions (MT)	4	0.03	0.0001	
Diesel				
Upstream Emission Factor (g/MMBtu)	13,634	117.00	0.2500	
Upstream Emissions (MT)	0.188	0.002	0.000003	
Gasoline				
Upstream Emission Factor (g/MMBtu)	18,338	124.00	0.3200	
Upstream Emissions (MT)	0.18	1.24E-03	3.20E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Upstream)
Total Upstream Emissions as CO2e (MT/year)	532	2,835	2	3,369

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

Facility-Wide Direct Actual GHG Emissions[2]				
Natural Gas	CO_2	CH_4	N_2O	
Combustion Emission Factor (kg/MMBtu)	61.71	0.003	0.0006	
Direct Emissions (MT)	2518.27	0.12	0.02	
Propane				
Combustion Emission Factor (kg/MMBtu)	62.87	0.003	0.0006	
Direct Emissions (MT)	15.67	0.0007	0.0001	
Diesel				
Combustion Emission Factor (kg/MMBtu)	73.96	0.003	0.0006	
Direct Emissions (MT)	1.02	0.00004	0.00001	
Gasoline				
Combustion Emission Factor (kg/MMBtu)	70.22	0.003	0.0006	
Direct Emissions (MT)	0.70	3.00E-05	6.00E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Direct)
Total Upstream Emissions as CO2e (MT/year)	2,518	10	6	2,535

[2] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

CO_2e
Upstream +
Direct 5,904

Facility-Wide Actual Co-Pollutant Emissions from GHG Sources																					
Natural Gas[3]	Total POM	Formaldehyde	Benzene	Acetaldehyde	1,3-Butadiene	1,1,1-Trichloroethane	Napthalene	Ethylbenzene	Toluene	Xylenes	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganes	Mercury	Nickel	Selenium
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-	-	5.98E-07	-	3.33E-06	-	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	0.03	3.00	0.08	-	-	-	0.02	-	0.14	-	72.01	0.01	0.00	0.04	0.06	0.00	0.02	0.02	0.01	0.08	0.00
Propane[4]																					
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-		5.98E-07		3.33E-06		1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	1.70E-04	1.83E-02	5.13E-04	0.00E+00	0.00E+00	-	1.49E-04	-	8.31E-04	-	4.40E-01	4.89E-05	2.93E-06	2.69E-04	3.42E-04	2.05E-05	1.22E-04	9.29E-05	6.35E-05	5.13E-04	5.87E-06
Diesel[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0023	0.0163	0.0129	0.0106	0.0005	-	-	-	0.0056	0.0039	-	-	-	-	-	-	-	-	-	-	-
Gasoline[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0017	0.0118	0.0093	0.0077	0.0004	-	-	-	0.0041	0.0029	-	-	-	-	-	-	-	-	-	-	-
Total Co-Pollutant Emissions (lbs/year)	0.03	3.05	0.11	0.02	0.00	-	0.02	-	0.15	0.01	72.45	0.01	0.0005	0.04	0.06	0.0034	0.02	0.02	0.01	0.08	0.001
Total Co-Pollutant Emissions (tons/year)	1.60E-05	0.0015	5.34E-05			-	1.23E-05	-	7.33E-05	0.00	3.62E-02	4.03E-06	2.42E-07	2.21E-05	2.82E-05	1.69E-06	1.01E-05	7.65E-06	5.23E-06	4.23E-05	4.83E-07

Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4. AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.
Where AP-42 provides a value in units of lb/10^6 scf, the value was converted to lb/MMBtu as follows:
(EF, lb/MMBtu) = (EF, lb/10^6 scf) x (scf /1020 Btu) x [10^6 Btu/MMBtu]

[3] *NOTE: The footnotes to AP-42 Tables 1.4-3 & 1.4.4 indicate that a value of 1020 Btu/scf should be used to convert the emission factor (in lb/10^6 scf) to lb/MMBtu.*

Emission factors for propane are assumed to be the same as natural gas.
NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.

[4]

[5] *Since mobile source HAP emission factors are unavailable, emission factors are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.*

2021 Combustion Emissions (GHG and Co-Pollutants)

2021 Facility-Wide Fuel Usage

Fuel Type	Source	MMBtu	Gallons
Natural Gas	Facility Wide NG Usage	52,578	
Propane	Facility Wide Propane Usage	296	
Diesel	Off-road Diesel Usage	28	200
Gasoline	Vehicle Gas Usage	10	80

Facility-Wide Upstream Actual GHG Emissions[1]

Natural Gas	CO_2	CH_4	N_2O	
Upstream Emission Factor (g/MMBtu)	12549	337	0.14	
Upstream Emissions (MT)	659.80	17.72	0.01	
Propane				
Upstream Emission Factor (g/MMBtu)	16,429	119	0.2700	
Upstream Emissions (MT)	5	0.04	0.0001	
Diesel				
Upstream Emission Factor (g/MMBtu)	13,634	117.00	0.2500	
Upstream Emissions (MT)	0.376	0.003	6.90E-06	
Gasoline				
Upstream Emission Factor (g/MMBtu)	18,338	124.00	0.3200	
Upstream Emissions (MT)	0.18	1.24E-03	3.20E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Upstream)
Total Upstream Emissions as CO2e (MT/year)	680	3,168	2	3,850

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

Facility-Wide Direct Actual GHG Emissions[2]

Natural Gas	CO_2	CH_4	N_2O	
Combustion Emission Factor (kg/MMBtu)	61.71	0.003	0.0006	
Direct Emissions (MT)	3244.58	0.16	0.03	
Propane				
Combustion Emission Factor (kg/MMBtu)	62.87	0.003	0.0006	
Direct Emissions (MT)	18.60	0.0009	0.0002	
Diesel				
Combustion Emission Factor (kg/MMBtu)	73.96	0.003	0.0006	
Direct Emissions (MT)	2.04	0.00008	0.00002	
Gasoline				
Combustion Emission Factor (kg/MMBtu)	70.22	0.003	0.0006	
Direct Emissions (MT)	0.70	3.00E-05	6.00E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Direct)
Total Upstream Emissions as CO2e (MT/year)	3,265	1,693	8	4,966

[2] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

Total 2021 CO_2e Upstream + Direct
8,816

Facility-Wide Actual Co-Pollutant Emissions from GHG Sources

Natural Gas[3]	Total POM	Formaldehyde	Benzene	Acetaldehyde	1,3-Butadiene	1,1,1-Trichloroethane	Napthalene	Ethylbenzene	Toluene	Xylenes	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganes	Mercury	Nickel	Selenium
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-	-	5.98E-07	-	3.33E-06	-	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	0.04	3.87	0.11			-	0.03	-	0.18	-	92.78	0.01	0.00	0.06	0.07	0.00	0.03	0.02	0.01	0.11	0.00
Propane[4]																					
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-		5.98E-07		3.33E-06		1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	2.02E-04	2.17E-02	6.09E-04	-	-	-	1.77E-04	-	9.86E-04	-	5.22E-01	5.80E-05	3.48E-06	3.19E-04	4.06E-04	2.44E-05	1.45E-04	1.10E-04	7.54E-05	6.09E-04	6.96E-06
Diesel[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0046	0.0326	0.0258	0.0212	0.0011	-	-	-	0.0113	0.0079	-	-	-	-	-	-	-	-	-	-	-
Gasoline[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0017	0.0118	0.0093	0.0077	0.0004	-	-	-	0.0041	0.0029	-	-	-	-	-	-	-	-	-	-	-
Total Co-Pollutant Emissions (lbs/year)	0.04	3.93	0.14	0.03	0.00	-	0.03	-	0.19	0.01	93.31	0.01	0.0006	0.06	0.07	0.0044	0.03	0.02	0.01	0.11	0.001
Total Co-Pollutant Emissions (tons/year)	2.12E-05	0.0020	7.20E-05	1.44E-05	7.35E-07	-	1.58E-05	-	9.58E-05	0.00	4.67E-02	5.18E-06	3.11E-07	2.85E-05	3.63E-05	2.18E-06	1.30E-05	9.85E-06	6.74E-06	5.44E-05	6.22E-07

[3] *Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4. AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.*
Emission factors for propane are assumed to be the same as natural gas.
NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are
[4] *presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.*

[5] *Since mobile source HAP emission factors are unavailable, emission factors are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.*

2022 Combustion Emissions (GHG and Co-Pollutants)

2022 Facility-Wide Fuel Usage

Fuel Type	Source	MMBtu	Gallons
Natural Gas	Facility Wide NG Usage	48,794	
Propane	Facility Wide Propane Usage	318	
Diesel	Off-road Diesel Usage	24	175
Gasoline	Vehicle Gas Usage	10	80

Facility-Wide Upstream Actual GHG Emissions[1]

Natural Gas	CO_2	CH_4	N_2O	
Upstream Emission Factor (g/MMBtu)	12549	337	0.14	
Upstream Emissions (MT)	612.31	16.44	0.01	
Propane				
Upstream Emission Factor (g/MMBtu)	16,429	119	0.2700	
Upstream Emissions (MT)	5	0.04	0.0001	
Diesel				
Upstream Emission Factor (g/MMBtu)	13,634	117.00	0.2500	
Upstream Emissions (MT)	0.329	0.003	6.04E-06	
Gasoline				
Upstream Emission Factor (g/MMBtu)	18,338	124.00	0.3200	
Upstream Emissions (MT)	0.18	1.24E-03	3.20E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Upstream)
Total Upstream Emissions as CO2e (MT/year)	632	3,061	2	3,695

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

Facility-Wide Direct Actual GHG Emissions[2]

Natural Gas	CO_2	CH_4	N_2O	
Combustion Emission Factor (kg/MMBtu)	61.71	0.003	0.0006	
Direct Emissions (MT)	3011.06	0.15	0.03	
Propane				
Combustion Emission Factor (kg/MMBtu)	62.87	0.003	0.0006	
Direct Emissions (MT)	20.01	0.0010	0.0002	
Diesel				
Combustion Emission Factor (kg/MMBtu)	73.96	0.003	0.0006	
Direct Emissions (MT)	1.79	0.00007	0.00001	
Gasoline				
Combustion Emission Factor (kg/MMBtu)	70.22	0.003	0.0006	
Direct Emissions (MT)	0.70	3.00E-05	6.00E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Direct)
Total Upstream Emissions as CO2e (MT/year)	3,031	1,692	8	4,731

[2] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

CO_2e
Upstream + Direct
8,427

Facility-Wide Actual Co-Pollutant Emissions from GHG Sources

Natural Gas[3]	Total POM	Formaldehyde	Benzene	Acetaldehyde	1,3-Butadiene	1,1,1-Trichloroethane	Napthalene	Ethylbenzene	Toluene	Xylenes	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-	-	5.98E-07		3.33E-06	-	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	0.03	3.59	0.10	-	-	-	0.03	-	0.16	-	86.11	0.01	0.00	0.05	0.07	0.00	0.02	0.02	0.01	0.10	0.00
Propane[4]																					
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-		5.98E-07		3.33E-06		1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	2.17E-04	2.34E-02	6.55E-04	-	-	-	1.90E-04	-	1.06E-03	-	5.62E-01	6.24E-05	3.74E-06	3.43E-04	4.37E-04	2.62E-05	1.56E-04	1.19E-04	8.11E-05	6.55E-04	7.49E-06
Diesel[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0041	0.0285	0.0225	0.0185	0.0009	-	-	-	0.0099	0.0069	-	-	-	-	-	-	-	-	-	-	-
Gasoline[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0017	0.0118	0.0093	0.0077	0.0004	-	-	-	0.0041	0.0029	-	-	-	-	-	-	-	-	-	-	-
Total Co-Pollutant Emissions (lbs/year)	0.04	3.65	0.13	0.03	0.00	-	0.03	-	0.18	0.01	86.67	0.01	0.0006	0.05	0.07	0.0040	0.02	0.02	0.01	0.10	0.001
Total Co-Pollutant Emissions (tons/year)	1.96E-05	0.0018	6.65E-05	1.31E-05	6.68E-07	-	1.47E-05	-	8.88E-05	0.00	4.33E-02	4.81E-06	2.89E-07	2.65E-05	3.37E-05	2.02E-06	1.20E-05	9.15E-06	6.26E-06	5.06E-05	5.78E-07

Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4. AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.
Where AP-42 provides a value in units of lb/10^6 scf, the value was converted to lb/MMBtu as follows:
(EF, lb/MMBtu) = (EF, lb/10^6 scf) x (scf /1020 Btu) x [10^6 Btu/MMBtu]

[3] *NOTE: The footnotes to AP-42 Tables 1.4-3 & 1.4.4 indicate that a value of 1020 Btu/scf should be used to convert the emission factor (in lb/10^6 scf) to lb/MMBtu.*

[4] *Emission factors for propane are assumed to be the same as natural gas.*
NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.

[5] *Since mobile source HAP emission factors are unavailable, emission factors are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.*

2023 Combustion Emissions (GHG and Co-Pollutants)

2023 Facility-Wide Fuel Usage			
Fuel Type	Source	MMBtu	Gallons
Natural Gas	Facility Wide NG Usage	48,364	
Propane	Facility Wide Propane Usage	294	
Diesel	Off-road Diesel Usage	44	320
Gasoline	Vehicle Gas Usage	18	145

Facility-Wide Upstream Actual GHG Emissions[1]				
Natural Gas	CO_2	CH_4	N_2O	
Upstream Emission Factor (g/MMBtu)	12549	337	0.14	
Upstream Emissions (MT)	512.10	13.75	0.01	
Propane				
Upstream Emission Factor (g/MMBtu)	16,429	119	0.2700	
Upstream Emissions (MT)	5	0.04	0.0001	
Diesel				
Upstream Emission Factor (g/MMBtu)	13,634	117.00	0.2500	
Upstream Emissions (MT)	0.602	0.005	1.10E-05	
Gasoline				
Upstream Emission Factor (g/MMBtu)	18,338	124.00	0.3200	
Upstream Emissions (MT)	0.33	2.25E-03	5.80E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Upstream)
Total Upstream Emissions as CO2e (MT/year)	532	2,835	2	3,369

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

Facility-Wide Direct Actual GHG Emissions[2]				
Natural Gas	CO_2	CH_4	N_2O	
Combustion Emission Factor (kg/MMBtu)	61.71	0.003	0.0006	
Direct Emissions (MT)	2984.56	0.15	0.03	
Propane				
Combustion Emission Factor (kg/MMBtu)	62.87	0.003	0.0006	
Direct Emissions (MT)	18.50	0.0009	0.0002	
Diesel				
Combustion Emission Factor (kg/MMBtu)	73.96	0.003	0.0006	
Direct Emissions (MT)	3.27	0.00013	0.00003	
Gasoline				
Combustion Emission Factor (kg/MMBtu)	70.22	0.003	0.0006	
Direct Emissions (MT)	1.27	5.44E-05	1.09E-05	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Direct)
Total Upstream Emissions as CO2e (MT/year)	3,005	1,692	8	4,704

[2] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

CO_2e Upstream + Direct
8,073

Facility-Wide Actual Co-Pollutant Emissions from GHG Sources																						
Natural Gas[3]	Total POM	Formaldehyde	Benzene	Acetaldehyde	1,3-Butadiene	1,1,1-Trichloroethane	Napthalene	Ethylbenzene	Toluene	Xylenes	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganes	Mercury	Nickel	Selenium
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-	-	5.98E-07		3.33E-06	-	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	0.03	3.56	0.10	-	-	-	0.03	-	0.16	-	85.35	0.01	0.00	0.05	0.07	0.00	0.02	0.02	0.01	0.10	0.00
Propane[4]																					
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-		5.98E-07		3.33E-06		1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	2.01E-04	2.16E-02	6.06E-04	-	-	-	1.76E-04	-	9.81E-04	-	5.19E-01	5.77E-05	3.46E-06	3.17E-04	4.04E-04	2.42E-05	1.44E-04	1.10E-04	7.50E-05	6.06E-04	6.92E-06
Diesel[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0074	0.0521	0.0412	0.0339	0.0017	-	-	-	0.0181	0.0126	-	-	-	-	-	-	-	-	-	-	-
Gasoline[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0030	0.0214	0.0169	0.0139	0.0007	-	-	-	0.0074	0.0052	-	-	-	-	-	-	-	-	-	-	-
Total Co-Pollutant Emissions (lbs/year)	0.04	3.65	0.16	0.05	0.00	-	0.03	-	0.19	0.02	85.87	0.01	0.0006	0.05	0.07	0.0040	0.02	0.02	0.01	0.10	0.001
Total Co-Pollutant Emissions (tons/year)	2.18E-05	0.0018	7.91E-05	2.39E-05	1.22E-06	-	1.45E-05	-	9.38E-05	0.00	4.29E-02	4.77E-06	2.86E-07	2.62E-05	3.34E-05	2.00E-06	1.19E-05	9.06E-06	6.20E-06	5.01E-05	5.72E-07

Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4. AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.

Where AP-42 provides a value in units of lb/10^6 scf, the value was converted to lb/MMBtu as follows:

(EF, lb/MMBtu) = (EF, lb/10^6 scf) x (scf /1020 Btu) x [10^6 Btu/MMBtu]

NOTE: The footnotes to AP-42 Tables 1.4-3 & 1.4.4 indicate that a value of 1020 Btu/scf should be used to convert the emission factor (in lb/10^6 scf) to lb/MMBtu.

[3] *Emission factors for propane are assumed to be the same as natural gas.*

NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are

[4] *presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.*

[5] *Since mobile source HAP emission factors are unavailable, emission factors are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.*

2024 Combustion Emissions (GHG and Co-Pollutants)

2024 Facility-Wide Fuel Usage			
Fuel Type	Source	MMBtu	Gallons
Natural Gas	Facility Wide NG Usage	44,219	
Propane	Facility Wide Propane Usage	351	
Diesel	Off-road Diesel Usage	14	100
Gasoline	Vehicle Gas Usage	13	100

Facility-Wide Upstream Actual GHG Emissions[1]				
Natural Gas	CO_2	CH_4	N_2O	
Upstream Emission Factor (g/MMBtu)	12549	337	0.14	
Upstream Emissions (MT)	554.90	14.90	0.01	
Propane				
Upstream Emission Factor (g/MMBtu)	16,429	119	0.2700	
Upstream Emissions (MT)	5	0.04	0.0001	
Diesel				
Upstream Emission Factor (g/MMBtu)	13,634	117.00	0.2500	
Upstream Emissions (MT)	0.188	0.002	3.45E-06	
Gasoline				
Upstream Emission Factor (g/MMBtu)	18,338	124.00	0.3200	
Upstream Emissions (MT)	0.23	0.0016	4.00E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Upstream)
Total Upstream Emissions as CO2e (MT/year)	575	2,932	2	3,508

[1] *Emission factors from the Appendix of NYSDEC "2024 NYS Statewide GHG Emissions Report", Table A1.*

Facility-Wide Direct Actual GHG Emissions[2]				
Natural Gas	CO_2	CH_4	N_2O	
Combustion Emission Factor (kg/MMBtu)	61.71	0.003	0.0006	
Direct Emissions (MT)	2728.76	0.13	0.03	
Propane				
Combustion Emission Factor (kg/MMBtu)	62.87	0.003	0.0006	
Direct Emissions (MT)	22.07	0.0011	0.0002	
Diesel				
Combustion Emission Factor (kg/MMBtu)	73.96	0.003	0.0006	
Direct Emissions (MT)	1.02	4.14E-05	8.28E-06	
Gasoline				
Combustion Emission Factor (kg/MMBtu)	70.22	0.003	0.0006	
Direct Emissions (MT)	0.88	3.75E-05	7.50E-06	
20-year Global Warming Potential (GWP)	1	84	264	Grand Total CO_2e(Direct)
Total Upstream Emissions as CO2e (MT/year)	2,749	1,691	7	4,447

[2] *Emission factors from 40 CFR Part 98 Subpart C, Tables C-1 & C-2.*

Total 2024 CO_2e
Upstream + Direct: 7,955

Facility-Wide Actual Co-Pollutant Emissions from GHG Sources																					
Natural Gas[3]	Total POM	Formaldehyde	Benzene	Acetaldehyde	1,3-Butadiene	1,1,1-Trichloroethane	Napthalene	Ethylbenzene	Toluene	Xylenes	Hexane	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganes	Mercury	Nickel	Selenium
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-	-	5.98E-07	-	3.33E-06	-	1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	0.03	3.25	0.09	-	-	-	0.03	-	0.15	-	78.03	0.01	0.001	0.05	0.06	0.00	0.02	0.02	0.01	0.09	0.001
Propane[4]																					
Emission Factor (lb/MMBtu)	6.83E-07	7.35E-05	2.06E-06	-	-		5.98E-07		3.33E-06		1.76E-03	1.96E-07	1.18E-08	1.08E-06	1.37E-06	8.24E-08	4.90E-07	3.73E-07	2.55E-07	2.06E-06	2.35E-08
Emissions (lbs/year)	2.40E-04	2.58E-02	7.23E-04	-	-	-	2.10E-04	-	1.17E-03	-	6.20E-01	6.88E-05	4.13E-06	3.79E-04	4.82E-04	2.89E-05	1.72E-04	1.31E-04	8.95E-05	7.23E-04	8.26E-06
Diesel[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0074	0.0521	0.0412	0.0339	0.0017	-	-	-	0.0181	0.0126	-	-	-	-	-	-	-	-	-	-	-
Gasoline[5]																					
Emission Factor (lb/MMBtu)	0.0002	0.0012	0.0009	0.0008	3.91E-05	-	-	-	0.0004	0.0003	-	-	-	-	-	-	-	-	-	-	-
Emissions (lbs/year)	0.0030	0.0214	0.0169	0.0139	0.0007	-	-	-	0.0074	0.0052	-	-	-	-	-	-	-	-	-	-	-
Total Co-Pollutant Emissions (lbs/year)	0.04	3.35	0.15	0.05	0.00	-	0.03	-	0.17	0.02	78.65	0.01	0.0005	0.05	0.06	0.0037	0.02	0.02	0.01	0.09	0.001
Total Co-Pollutant Emissions (tons/year)	2.04E-05	0.0017	7.49E-05	2.39E-05	1.22E-06	-	1.33E-05	-	8.70E-05	0.00	3.93E-02	4.37E-06	2.62E-07	2.40E-05	3.06E-05	1.84E-06	1.09E-05	8.30E-06	5.68E-06	4.59E-05	5.24E-07

Emission factors for natural gas are taken from AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4. AP-42, Section 1.4 ("Natural Gas Combustion"), Tables 1.4-3 & 1.4-4.
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[3] *NOTE: The footnotes to AP-42 Tables 1.4-3 & 1.4.4 indicate that a value of 1020 Btu/scf should be used to convert the emission factor (in lb/10^6 scf) to lb/MMBtu.*

[4] *Emission factors for propane are assumed to be the same as natural gas.*
NOTE: Per AP-42, "1.5 Liquified Petroleum Gas Combustion", Table 1.5-1 states that "...TOC emissions are assumed to be the same, on a heat input basis, as for natural gas combustion". While Section 1.5 of AP-42 does not provide any information regarding speciated HAPs, the emissions of HAPs (which are presumably a subset of TOC) are assumed to be the same on a heat input basis as natural gas.

[5] *Since mobile source HAP emission factors are unavailable, emission factors are taken from AP-42, Section 3.3 ("Gasoline and Diesel Industrial Engines"), Table 3.3-2.*

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