Unrestricted Potential to Emit of Existing Emission Units, Before Permit Issuance (tons/yr)								
Emission Unit	CO	NOx	SO_2	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
2 Fuel oil-fired Boilers	1.61	6.46	0.07	0.65	0.65	0.65	0.00	0.11
2 Propane-fired Boilers	2.41	4.17	0.48	0.22	0.22	0.22	0.00	0.26
Total PTE of existing emission units	4.02	10.63	0.55	0.87	0.87	0.87	0.00	0.37

Unrestricted Potential to Emit of New Biomass-Fired Boiler, Before Permit Issuance (tons/yr)								
Emission Unit	CO	NOx	SO_2	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
1 Biomass-fired Boiler	18.77	6.88	0.78	6.88	6.26	3.75	0.00	0.53

Facility-wide Potential to Emit, Before Permit Issuance								
Emission Unit	CO	NOx	SO_2	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
Total Unrestricted PTE of facility	22.79	17.51	1.33	7.75	7.13	4.62	0.00	0.90

Facility-wide Potential to Emit, After Permit Issuance (tons/yr)								
Emission Unit	CO	NOx	SO_2	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
2 Fuel oil-fired Boilers	1.45	5.81	0.06	0.58	0.58	0.58	0.00	0.10
2 Propane-fired Boilers	2.16	3.75	0.43	0.20	0.20	0.20	0.00	0.23
1 Biomass-fired Boiler	13.14	4.82	0.55	4.82	4.38	2.63	0.00	0.37
Total Facility PTE, Enforceable	16.76	14.38	1.04	5.60	5.16	3.41	0.00	0.70

GHG PTE Before Permit Issuance (tons/yr)	CO_2	CH_4	N_2O	CO_2e
2 Fuel Oil-Fired Boilers	7484.61	0.30	0.06	7509.42
2 Propane-Fired Boilers	3976.26	0.06	0.01	3979.63
1 Biomass-Fired Boiler	6469.68	2.21	0.29	6605.83
TOTAL, Before Permit Issuance	17930.55	2.57	0.36	18094.88

GHG PTE Afer Permit Issuance (tons/yr)	CO_2	CH_4	N_2O	CO_2e
2 Fuel Oil-Fired Boilers	6736.15	0.27	0.05	6758.48
2 Propane-Fired Boilers	3578.64	0.06	0.01	3581.67
1 Biomass-Fired Boiler	4528.77	1.54	0.20	4624.08
TOTAL, After Permit Issuance	14843.56	1.87	0.26	14964.23

Nominal Heat Rate:	4.18	MMBtu/hr
System Efficiency:	81	%
Energy Input [1]:	5.160494	MMBtu/hr
Capacity Factor - After Issuance	90	%
Unrestricted Hours of Operation	8760	hr/yr
Restricted Hours of Operation [2]	7884	hr/yr
Fuel Oil Heating Value [3]	140	MMBTU/1000 gal
Fuel Oil Sulfur Content (by weight)	0.0015	%

	CO	NOx	SO_2 [6]	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
AP-42 - Fuel Oil (lb/1000 gal) [4]	5	20	142	2	2	2	0.00151	0.34
Fuel Oil Emission Factor (lb/MMBTU) [5]	0.0357143	0.142857	0.0015214	0.014286	0.014286	0.014286	1.08E-05	0.002429
Unrestricted Boiler PTE (ton/yr) [7]	0.8072487	3.228995	0.0343888	0.322899	0.322899	0.322899	0.000244	0.054893
Restricted Boiler PTE (ton/yr) [7]	0.7265238	2.906095	0.0309499	0.29061	0.29061	0.29061	0.000219	0.049404

Unrestricted PTE, 2 Boilers (tons/yr) [8]	1.6144974	6.457989	0.0687776	0.645799	0.645799	0.645799	0.000488	0.109786
Restricted PTE, 2 Boilers (tons/yr) [8]	1.4530476	5.81219	0.0618998	0.581219	0.581219	0.581219	0.000439	0.098807

Notes and Calculation Methodology

[1]	Energy Input (MMBTU/hr) = Nominal Heat Rate (MMBTU/hr) / System Efficiency (%)
[2]	Restricted Hours of Operation = 8760 hrs * Capacity Factor (%)
[3]	AP-42, Volume 1, 5th Edition, Page 1.3-8
[4]	AP-42, Volume 1, 5th Edition, Table 1.3-1, 1.3-3, and 1.3-11
[5]	Emission Factor (lb/MMBTU) = AP-42 factor (lb/1000 gal) / Fuel Heating Value (MMBTU/1000 gal)
[6]	SO_2 Emission Factor (lb/MMBTU) = AP42 factor (lb/1000 gal) * Sulfur Content (%) / Fuel Heating Value (MMBTU/1000 gal)
[7]	PTE (tons/yr) = Emission Factor (lb/MMBTU) * Energy Input (MMBTU/hr) * Hours of Operation (hr) / 2000 (lb/ton)
[8]	PTE for 2 boilers (tons/yr) = Boiler PTE (tons/yr) * 2 boilers

Nominal Heat Rate:	2.68	MMBtu/hr
System Efficiency:	80	%
Energy Input [1]:	3.35	MMBtu/hr
Capacity Factor - After Issuance	90	%
Unrestricted Hours of Operation	8760	hr/yr
Restricted Hours of Operation [2]	7884	hr/yr
Propane Heating Value [3]	91.5	MMBTU/1000 gal
Propane Sulfur Content	15	gr/100 cf

	CO	NOx	SO_2 [6]	PM	PM_{10}	$PM_{2.5}$	Lead	VOC
AP-42 - Propane (lb/1000 gal) [4]	7.5	13	0.1	0.7	0.7	0.7	0	0.8
Propane Emission Factor (lb/MMBTU) [5]	0.0819672	0.142077	0.0163934	0.00765	0.00765	0.00765	0	0.008743
Unrestricted Boiler PTE (ton/yr) [7]	1.2027049	2.084689	0.240541	0.112252	0.112252	0.112252	0	0.128289
Restricted Boiler PTE (ton/yr) [7]	1.0824344	1.87622	0.2164869	0.101027	0.101027	0.101027	0	0.11546

Unrestricted PTE, 2 Boilers (tons/yr) [8]	2.4054098	4.169377	0.481082	0.224505	0.224505	0.224505	0	0.256577
Restricted PTE, 2 Boilers (tons/yr) [8]	2.1648689	3.752439	0.4329738	0.202054	0.202054	0.202054	0	0.230919

Notes and Calculation Methodology

[1]	Energy Input (MMBTU/hr) = Nominal Heat Rate (MMBTU/hr) / System Efficiency (%)
[2]	Restricted Hours of Operation = 8760 hrs * Capacity Factor (%)
[3]	AP-42, Volume 1, 5th Edition, Table 1.5-1, Note a
[4]	AP-42, Volume 1, 5th Edition, Table 1.5-1
[5]	Emission Factor (lb/MMBTU) = AP-42 factor (lb/1000 gal) / Fuel Heating Value (MMBTU/1000 gal)
[6]	SO_2 Emission Factor (lb/MMBTU) = AP-42 factor * Sulfur Content (gr/100 cf) / Fuel Heating Value (MMBTU/1000 gal)
[7]	PTE (tons/yr) = Emission Factor (lb/MMBTU) * Energy Input (MMBTU/hr) * Hours of Operation (hr) / 2000 (lb/ton)
[8]	PTE for 2 boilers (tons/yr) = Boiler PTE (tons/yr) * 2 boilers

Nominal Heat Rate:	5	MMBtu/hr
System Efficiency:	70	%
Energy Input [1]:	7.142857	MMBtu/hr
Capacity Factor - After Issuance	70	%
Unrestricted Hours of Operation	8760	hr/yr
Restricted Hours of Operation [2]	6132	hr/yr

	CO	NOx	SO_2	PM [4]	PM_{10} [4]	$PM_{2.5}$ [4]	Lead	VOC
AP-42 - Biomass Emission Factor (lb/MMBTU) [3]	0.6	0.22	0.025	0.22	0.2	0.12	4.80E-05	0.017
Unrestricted Boiler PTE (ton/yr) [5]	18.771429	6.882857	0.7821429	6.882857	6.257143	3.754286	0.001502	0.531857
Restricted Boiler PTE (ton/yr) [5]	13.14	4.818	0.5475	4.818	4.38	2.628	0.001051	0.3723

Notes and Calculation Methodology

[1]	Energy Input (MMBTU/hr) = Nominal Heat Rate (MMBTU/hr) / System Efficiency (%)
[2]	Restricted Hours of Operation = 8760 hrs * Capacity Factor (%)
[3]	AP-42, Volume 1, 5th Edition, Tables 1.6-1, 1.6-2, 1.6-3, and 1.6-4
[4]	PM Emission Factors assume a mechanical collector (multiclone) will be used to control particulate matter.
[5]	PTE (tons/yr) = Emission Factor (lb/MMBTU) * Energy Input (MMBTU/hr) * Hours of Operation (hr) / 2000 (lb/ton)

Fuel Oil Heat Input per boiler	5.160493827	MMBTU/hr
Propane Heat Input per boiler	3.35	MMBTU/hr
Biomass Heat Input per boiler	7.142857143	MMBTU/hr
Fuel Oil Boiler Capacity Factor	90	%
Propane Boiler Capacity Factor	90	%
Boimass Boiler Capacity Factor	70	%
Unrestricted Hours of Operation	8760	hr/yr
Fuel Oil Boiler Limited Hours	7884	hr/yr
Propane Boiler Limited Hours	7884	hr/yr
Biomass Boiler Limited Hours	6132	hr/yr

GHG Emission Factors by Fuel Type, in kg/MMBTU [1]

Fuel Type	CO_2	CH_4	N_2O
Fuel Oil [3]	75.1	3.00E-03	6.00E-04
Propane [4]	61.46	1.00E-03	1.00E-04
Biomass	93.8	3.20E-02	4.20E-03

Global Warming Potentials [2]

CO_2	1
Methane (CH_4)	21
Nitrous Oxide (N_2O)	310

GHG PTE, before permit issuance, tons/yr [5]				
Emission Unit	CO_2	CH_4	N_2O	CO_2e [6]
2 Fuel Oil Boilers	7484.61	0.30	0.06	7509.42
2 Propane Boilers	3976.26	0.06	0.01	3979.63
1 Biomass Boiler	6469.68	2.21	0.29	6605.83
FACILITY TOTAL	17930.55	2.57	0.36	18094.88

GHG PTE, after permit issuance, tons/yr [7]				
Emission Unit	CO_2	CH_4	N_2O	CO_2e [6]
2 Fuel Oil Boilers	6736.15	0.27	0.05	6758.48
2 Propane Boilers	3578.64	0.06	0.01	3581.67
1 Biomass Boiler	4528.77	1.54	0.20	4624.08
FACILITY TOTAL	14843.56	1.87	0.26	14964.23

Notes

[1]	40 CFR 98, Subpart C, Table C-1 and C-2
[2]	40 CFR 98, Subpart A, Table A-1
[3]	For CO_2, assumes residual #6 since it has the highest emission factor
[4]	For propane CH_4 and N_2O emission factors, assumes natural gas
[5]	GHG PTE (tons/yr) = Heat Input (MMBTU/hr) * 8760 hrs/yr * GHG EF (kg/MMBTU) * 2.20462(lb/kg) / 2000 (lb/ton)
[6]	CO_2e = CO_2 (tons/yr) * CO_2 GWP (1) + CH_4 (tons/yr) * CH_4 GWP (21) + N_2O (tons/yr) * N_2O GWP (310)
[7]	GHG PTE (tons/yr) = Heat Input (MMBTU/hr) * operating hours (hrs/yr) * GHG EF (kg/MMBTU) * 2.20462(lb/kg) / 2000 (lb/ton)