

Annual Air Emission Inventory and Emission Statement

BOWDOIN COLLEGE

General Facility Information

Facility ID:	2300500087	Inventory Year:	2017
Facility Name:	BOWDOIN COLLEGE	Operating Status:	Operating
Description:	EDUCATIONAL FACILITY	Operating Status Year:	2017
NAICS Code:	611310	NAICS Description:	Colleges, Universities, and Professional Schools
Parent Company:	BOWDOIN COLLEGE	Facility Category:	Synthetic Minor
Street Address:	3800 COLLEGE STA BRUNSWICK, ME 04011-8429	Mailing Address:	3800 COLLEGE STA BRUNSWICK, ME 04011-8429
Air License Number:	A-000076	Air License Expiration Date:	08/14/2025 12:00 AM
Latitude:	43.905232	Longitude:	-69.965109
Comment:	Operating		

Exhaust Points

<u>Exhaust Point ID</u>	<u>Description</u>	<u>Type</u>	<u>Operating Status</u>
EXH004	DIESEL GENERATOR STACKS	Fugitive	Operating
EXH002	DISTILLATE BOILER STACKS	Fugitive	Operating
EXH099	FACILITY-WIDE FUGITIVE	Fugitive	Operating
EXH003	NATURAL GAS BOILER STACKS	Fugitive	Operating
EXH101	NATURAL GAS GENERATOR STACKS	Fugitive	Operating
EXH100	PROPANE BOILER STACK	Fugitive	Operating
EXH102	PROPANE GENERATOR STACKS	Fugitive	Operating
EXH001	STACK #1	Vertical	Operating

Emissions Unit

Unit ID: **011** Operating Status: **Removed from License (Equipment Only)**
 Description: **ADMISSIONS BLDG BOILER** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.2 E6BTU/HR**
 Comment: **This boiler was removed in May 2016**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **011-1** Description: **#2 FUEL OIL / DIESEL**
 Comment: **This boiler was removed in May 2016**
 SCC Code: **10300501** Material Code: **Distillate Oil - No. 1 & 2**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	5.0 LB/E3GAL	
7439921	Lead	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	
NOX	Nitrogen Oxides	CAP	Other Emission Factor (no Control Efficiency used)	28.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	11.2 LB/E3GAL	

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	Trade Group Emission Factor (pre-control) plus Control Efficiency	0.83 LB/E3GAL
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	70.42 LB/E3GAL
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	0.34 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.351 LB/E3GAL
107028	Acrolein	HAP	State/Local Emission Factor (no Control Efficiency used)	0.351 LB/E3GAL
7440382	Arsenic	HAP		
71432	Benzene	HAP	State/Local Emission Factor (no Control Efficiency used)	0.129 LB/E3GAL
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Process

Process ID: **011-2** Description: **Biodiesel**
 Comment: **This boiler was removed in May 2016**
 SCC Code: **10301301** Material Code:
 Material IO Code: Material UOM Code:
 % Ash Content: % Sulfur Content:
 Operating Status: Not Operational

Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Throughput Not Reported.												

Emissions

<u>Pollutant Code</u>	<u>Pollutant Description</u>	<u>Type</u>	<u>Method</u>	<u>Emission Factor</u>	<u>Process Emissions Tons/Yr</u>
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP			
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP			
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP			
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP			
SO2	Sulfur Dioxide	CAP			
VOC	Volatile Organic Compounds	CAP			
124389	Carbon Dioxide	GHG			
74828	Methane	GHG			
10024972	Nitrous Oxide	GHG			
75070	Acetaldehyde	HAP			
107028	Acrolein	HAP			
7440382	Arsenic	HAP			
71432	Benzene	HAP			
7440439	Cadmium	HAP			
7440473	Chromium	HAP			
7440484	Cobalt	HAP			
600	Dioxin & Dioxin-like Compounds	HAP			
50000	Formaldehyde	HAP			
7439965	Manganese	HAP			
7439976	Mercury	HAP			
7440020	Nickel	HAP			
246	Polycyclic Organic Matter	HAP			

Control Approaches for ADMISSIONS BLDG BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for ADMISSIONS BLDG BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH002	DISTILLATE BOILER STACKS	2300500087011002	100.0	

Exhaust Point Apportionments for ADMISSIONS BLDG BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH002	DISTILLATE BOILER STACKS	2300500087011002	100.0	

Emissions Unit

Unit ID: **091** Operating Status: **Operating**
 Description: **BOILER 1 (renamed - previously licensed as Boiler4)** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **72.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			4092	

Process

Process ID: **091-1** Description: **#2 Fuel Oil / Diesel**
 Comment: **Please update SCC to be consistent with Boiler #2**
 SCC Code: **10300501** Material Code: **Distillate Oil - No. 1 & 2**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
30.75	0	0	5.359	21.803	0	0	0	0	0	0	0.014	3.574

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	0.01
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	5.0 LB/E3GAL	0.077
7439921	Lead	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	1.94E-5
NOX	Nitrogen Oxides	CAP	Other Emission Factor (no Control Efficiency used)	28.0 LB/E3GAL	0.431
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	11.2 LB/E3GAL	0.172
PM25-FIL	Particulate Matter, 2.5	CAP	Trade Group Emission	0.83 LB/E3GAL	0.013

	microns, filterable		Factor (pre-control) plus Control Efficiency		
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	70.42 LB/E3GAL	1.083
VOC	Volatile Organic Compounds	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.2 LB/E3GAL	0.003
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	350.2
74828	Methane	GHG	State/Local Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	0.0142
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	0.0028
75070	Acetaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
107028	Acrolein	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	5.6E-4 LB/E3GAL	8.6E-6
71432	Benzene	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.5E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.5E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	3.2E-6
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	4.07E-10
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.035 LB/E3GAL	5.4E-4
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-4 LB/E3GAL	1.3E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.5E-6
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.5E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.0033 LB/E3GAL	5.1E-5

Process

Process ID: **091-3** Description: **Biodiesel**
 Comment:
 SCC Code: **10301301** Material Code: **Liquid Waste**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: Not Operational

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

<u>Pollutant Code</u>	<u>Pollutant Description</u>	<u>Type</u>	<u>Method</u>	<u>Emission Factor</u>	<u>Process Emissions Tons/Yr</u>
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP			
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP			
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP			
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP			
SO2	Sulfur Dioxide	CAP			
VOC	Volatile Organic Compounds	CAP			
124389	Carbon Dioxide	GHG			
74828	Methane	GHG			
10024972	Nitrous Oxide	GHG			
75070	Acetaldehyde	HAP			
107028	Acrolein	HAP			
7440382	Arsenic	HAP			
71432	Benzene	HAP			
7440439	Cadmium	HAP			
7440473	Chromium	HAP			
7440484	Cobalt	HAP			
600	Dioxin & Dioxin-like Compounds	HAP			
50000	Formaldehyde	HAP			
7439965	Manganese	HAP			
7439976	Mercury	HAP			
7440020	Nickel	HAP			
246	Polycyclic Organic Matter	HAP			

Process

Process ID: **091-2** Description: **Natural Gas**
 Comment:
 SCC Code: **10300602** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
63.744	9.67	9.742	9.811	7.231	5.288	0.459	0	0	0	0	8.779	12.764

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	0.016
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	2.68
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.6E-5
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	3.187
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	2.63
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.061
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	0.02
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.18
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	3794.9
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.0714
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	0.0073
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	5.0E-4
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	5.93E-4
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	6.4E-6

			Control Efficiency used)		
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	6.7E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	3.5E-5
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	4.5E-5
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	2.7E-6
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	0.0024
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	1.2E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	8.3E-6
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	6.7E-5
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	2.13E-5

Control Approaches for BOILER 1 (renamed - previously licensed as Boiler4)

Control Approaches Not Reported

Exhaust Point Apportionments for BOILER 1 (renamed - previously licensed as Boiler4)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087091001	100.0	

Exhaust Point Apportionments for BOILER 1 (renamed - previously licensed as Boiler4)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087091001	100.0	

Exhaust Point Apportionments for BOILER 1 (renamed - previously licensed as Boiler4)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087091001	100.0	

Emissions Unit

Unit ID: **103** Operating Status: **Operating**
 Description: **Boiler 2 (new unit)** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **72.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			2736	

Process

Process ID: **103-1** Description: **Distillate Fuel**
 Comment:
 SCC Code: **10300502** Material Code: **Distillate Oil**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
3.147	1.115	0	0	0	0	0	0	0	0	0.002	0.008	2.022

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	0.001
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	5.0 LB/E3GAL	0.0079
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	1.98E-6
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	28.0 LB/E3GAL	0.044
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	11.2 LB/E3GAL	0.0176
PM25-FIL	Particulate Matter, 2.5	CAP	EPA Emission Factor (no	0.83 LB/E3GAL	0.0013

	microns, filterable		Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	State/Local Emission Factor (no Control Efficiency used)	70.42 LB/E3GAL	0.1108
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	0.2 LB/E3GAL	3.0E-4
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	35.84
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	0.00145
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.185 LB/E3GAL	2.91E-4
75070	Acetaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
107028	Acrolein	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	5.6E-4 LB/E3GAL	8.8E-7
71432	Benzene	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E3GAL	0.0
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.6E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.6E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	3.3E-7
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	4.17E-11
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.035 LB/E3GAL	5.5E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-4 LB/E3GAL	1.3E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.6E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	4.2E-4 LB/E3GAL	6.6E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.0033 LB/E3GAL	5.2E-6

Process

Process ID:

103-2

Description:

Natural Gas

Comment:

SCC Code: 10300602

Material Code: Natural Gas

Material IO Code: I (Burned)

Material UOM Code: Millions of Cubic Feet

% Ash Content:

% Sulfur Content:

Operating Status: Operational

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
49.3313	10.1169	7.6217	9.2473	3.2881	2.4048	0	0	0	0	4.1569	5.2755	7.2201

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	0.012
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	2.07
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.2E-5
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	2.467
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	2.03
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.047
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	0.01
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.14
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	2936.86
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.0553
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	0.0057
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	3.87E-4
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	4.59E-4
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	4.9E-6
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	5.2E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	2.7E-5

7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	3.5E-5
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	2.1E-6
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	0.0018
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	9.4E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	6.4E-6
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	5.2E-5
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	1.65E-5

Control Approaches for Boiler 2 (new unit)

Control Approaches Not Reported

Exhaust Point Apportionments for Boiler 2 (new unit)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087103001	100.0	

Exhaust Point Apportionments for Boiler 2 (new unit)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087103001	100.0	

Emissions Unit

Unit ID: **003** Operating Status: **Removed from License (Equipment Only)**
 Description: **BOILER 3** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **48.8 E6BTU/HR**
 Comment: **This boiler was removed in 2016.**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **003-2** Description: **#2 FUEL OIL / DIESEL**
 Comment: **This boiler was removed in 2016.**
 SCC Code: **10300501** Material Code: **Distillate Oil - No. 1 & 2**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	5.0 LB/E3GAL	
7439921	Lead	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	
NOX	Nitrogen Oxides	CAP	Trade Group Emission Factor (no Control Efficiency used)	42.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	11.2 LB/E3GAL	

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	Trade Group Emission Factor (pre-control) plus Control Efficiency	0.83 LB/E3GAL
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	70.42 LB/E3GAL
VOC	Volatile Organic Compounds	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.2 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.351 LB/E3GAL
107028	Acrolein	HAP	State/Local Emission Factor (no Control Efficiency used)	0.351 LB/E3GAL
7440382	Arsenic	HAP		
71432	Benzene	HAP	State/Local Emission Factor (no Control Efficiency used)	0.129 LB/E3GAL
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Process

Process ID: **003-4** Description: **Biodiesel**
 Comment: **This boiler was removed in 2016.**
 SCC Code: **10301301** Material Code: **Liquid Waste**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: Not Operational

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

0	0	0	0	0	0	0	0	0	0	0	0	0
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Emissions

<u>Pollutant Code</u>	<u>Pollutant Description</u>	<u>Type</u>	<u>Method</u>	<u>Emission Factor</u>	<u>Process Emissions Tons/Yr</u>
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP			
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP			
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP			
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP			
SO2	Sulfur Dioxide	CAP			
VOC	Volatile Organic Compounds	CAP			
124389	Carbon Dioxide	GHG			
74828	Methane	GHG			
10024972	Nitrous Oxide	GHG			
75070	Acetaldehyde	HAP			
107028	Acrolein	HAP			
7440382	Arsenic	HAP			
71432	Benzene	HAP			
7440439	Cadmium	HAP			
7440473	Chromium	HAP			
7440484	Cobalt	HAP			
600	Dioxin & Dioxin-like Compounds	HAP			
50000	Formaldehyde	HAP			
7439965	Manganese	HAP			
7439976	Mercury	HAP			
7440020	Nickel	HAP			
246	Polycyclic Organic Matter	HAP			

Process

Process ID:	003-3	Description:	Natural Gas
Comment:	This boiler was removed in 2016.		
SCC Code:	10300602	Material Code:	Natural Gas
Material IO Code:	I (Burned)	Material UOM Code:	Millions of Cubic Feet
% Ash Content:		% Sulfur Content:	
Operating Status:	Not Operational		

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

<u>Pollutant Code</u>	<u>Pollutant Description</u>	<u>Type</u>	<u>Method</u>	<u>Emission Factor</u>	<u>Process Emissions Tons/Yr</u>
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	
124389	Carbon Dioxide	GHG			
74828	Methane	GHG			
10024972	Nitrous Oxide	GHG			
75070	Acetaldehyde	HAP			
107028	Acrolein	HAP			
7440382	Arsenic	HAP			
71432	Benzene	HAP			
7440439	Cadmium	HAP			
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	
7440484	Cobalt	HAP			
600	Dioxin & Dioxin-like Compounds	HAP			
50000	Formaldehyde	HAP			
7439965	Manganese	HAP			
7439976	Mercury	HAP			
7440020	Nickel	HAP			
246	Polycyclic Organic Matter	HAP			

Control Approaches for BOILER 3

Control Approaches Not Reported

Exhaust Point Apportionments for BOILER 3

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087003001	100.0	

Exhaust Point Apportionments for BOILER 3

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087003001	100.0	

Exhaust Point Apportionments for BOILER 3

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH001	STACK #1	2300500087003001	100.0	

Emissions Unit

Unit ID: **018** Operating Status: **Temporarily Shutdown**
 Description: **CENTRAL HEATING PLANT GENERATOR** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **2.0 E6BTU/HR**
 Comment: **Moved to storage and not in use**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **018-1** Description: **#2 FUEL OIL / DIESEL**
 Comment: **Moved to storage and not in use**
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	

VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP		
107028	Acrolein	HAP		
7440382	Arsenic	HAP		
71432	Benzene	HAP		
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Control Approaches for CENTRAL HEATING PLANT GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for CENTRAL HEATING PLANT GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH004	DIESEL GENERATOR STACKS	2300500087018004	100.0	

Emissions Unit

Unit ID: **014** Operating Status: **Operating**
 Description: **CHAMBERLAIN HALL** Operating Status Year: **2017**
BOILER
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **014-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.5603	0.1576	0.2038	0.1435	0.1518	0.0767	0.0811	0.0964	0.1233	0.1245	0.1269	0.1128	0.1619

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	3.8E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0655
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	3.9E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.07802
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0643
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0015

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	5.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0043
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	92.89
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00175
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.8E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.22E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.45E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.6E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.6E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	8.6E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.09E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	6.6E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	5.9E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	3.0E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.0E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.6E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	5.22E-7

Control Approaches for CHAMBERLAIN HALL BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for CHAMBERLAIN HALL BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087014003

100.0

Emissions Unit

Unit ID: **019** Operating Status: **Operating**
 Description: **CHAMBERLAIN HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **2.1 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **019-1** Description: **#2 FUEL OIL / DIESEL**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.84238	0.04216	0.05977	0.09377	0.03787	0.03976	0.03599	0.02398	0.05431	0.09436	0.22453	0.11743	0.01845

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	3.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.05475
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	5.31E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.2544
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0179
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0179

SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	8.8E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0208
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	9.595
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	3.89E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	7.6E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	4.42E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	5.35E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	6.36E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	5.39E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	2.77E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	6.36E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	8.8E-8
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	1.12E-11
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	6.82E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	4.55E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	1.74E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	2.7E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	9.7E-6

Control Approaches for CHAMBERLAIN HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for CHAMBERLAIN HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087019004

100.0

Emissions Unit

Unit ID: **030** Operating Status: **Operating**
 Description: **COFFIN STREET DORM** Operating Status Year: **2017**
WEST BOILER
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **030-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.9753	0.0985	0.1274	0.0897	0.0949	0.048	0.0507	0.0602	0.0771	0.0778	0.0793	0.0705	0.1012

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	2.4E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.041
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	2.4E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.04877
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0402
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	9.3E-4

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	3.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0027
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	58.06
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00109
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.1E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	7.66E-6
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	9.07E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	9.8E-8
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	5.4E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	6.83E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	4.1E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	3.7E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	1.9E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	1.3E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	3.26E-7

Control Approaches for COFFIN STREET DORM WEST BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for COFFIN STREET DORM WEST BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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05/16/2018 9:16 AM

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2300500087

Annual Air Emission Inventory and Emission Facility Report

EXH003

NATURAL GAS BOILER
STACKS

2300500087030003

100.0

Emissions Unit

Unit ID: **020** Operating Status: **Operating**
 Description: **DRUCKENMILLER HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.5 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **020-1** Description: **#2 FUEL OIL / DIESEL**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.63461	0.03176	0.04503	0.07064	0.02853	0.02995	0.02711	0.01807	0.04092	0.07108	0.16915	0.08847	0.0139

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	3.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.04125
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	4.0E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.1917
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0135
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0135

SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	6.7E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0156
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	7.228
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	2.93E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	5.7E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	3.33E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	4.03E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	4.79E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	4.06E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	2.09E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	4.79E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	6.7E-8
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	8.41E-12
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	5.14E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	3.43E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	1.31E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	2.0E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	7.3E-6

Control Approaches for DRUCKENMILLER HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for DRUCKENMILLER HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087020004

100.0

Emissions Unit

Unit ID: **010** Operating Status: **Operating**
 Description: **FARLEY FIELD HOUSE** Operating Status Year: **2017**
BOILER
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **6.4 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **010-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
6.2261	0.629	0.8133	0.5727	0.6057	0.3062	0.3235	0.3845	0.4921	0.497	0.5061	0.4501	0.6459

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	0.0015
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.261
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.6E-6
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.3113
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	51.5 LB/E6FT3	0.16
PM25-FIL	Particulate Matter, 2.5	CAP	EPA Emission Factor (no	1.9 LB/E6FT3	0.0059

	microns, filterable		Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	0.002
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.017
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	370.66
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00697
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	7.2E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	4.89E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	5.79E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	6.2E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	6.5E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	3.4E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	4.36E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	2.6E-7
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	2.3E-4
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	1.2E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	8.1E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	6.5E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	2.08E-6

Control Approaches for FARLEY FIELD HOUSE BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for FARLEY FIELD HOUSE BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH003	NATURAL GAS BOILER STACKS	2300500087010003	100.0	

Emissions Unit

Unit ID: **102** Operating Status: **Operating**
 Description: **Farley Field House Generator** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **0.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **102-1** Description: **Natural Gas**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.018424	0.001861	0.002407	0.001695	0.001792	0.000906	0.000957	0.001138	0.001456	0.001471	0.001498	0.001332	0.001911

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Other Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.5E-6
CO	Carbon Monoxide	CAP	Other Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.002978
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.6E-9
NOX	Nitrogen Oxides	CAP	Other Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.038337
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	9.313E-5
<u>Comment: Based on license, which uses AP-42 factor</u>					
PM25-FIL	Particulate Matter, 2.5	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	9.313E-5

	microns, filterable		Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	6.0E-6
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.0011088
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	1.0968
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	2.06E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.1E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	3.8E-7
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	6.1E-8
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.8E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	1.14E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	6.5E-8
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	1.26E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	7.7E-10
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	6.74E-6
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	7.6E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.4E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	1.09E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	6.16E-9

Control Approaches for Farley Field House Generator

Control Approaches Not Reported

Exhaust Point Apportionments for Farley Field House Generator

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087102101	100.0	

Emissions Unit

Unit ID: **090** Operating Status: **Operating**
 Description: **FUGITIVE GHG EMISSIONS** Operating Status Year: **2017**
 Unit Type/Desc: **390 Other fugitive**
 Design Capacity:
 Comment: **Emissions based on mass balance calculations.**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **090-2** Description: **GREENHOUSE GASES**
 Comment: **Emissions based on mass balance calculations.**
 SCC Code: **31380001** Material Code: **Gas**
 Material IO Code: **I (Added)** Material UOM Code: **Pounds**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
44	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
811972	1,1,1,2-Tetrafluoroethane (structure: CH2FCF3) (HFC-134a / R-134a)	GHG	Material Balance		0.00288
420462	1,1,1-Trifluoroethane (HFC-143a / R-143a)	GHG	Material Balance		0.01144
354336	Pentafluoroethane (HFC- 125, R-125)	GHG	Material Balance		0.00968

Control Approaches for FUGITIVE GHG EMISSIONS

Control Approaches Not Reported

Exhaust Point Apportionments for FUGITIVE GHG EMISSIONS

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH099	FACILITY-WIDE FUGITIVE	2300500087090099	100.0	

Emissions Unit

Unit ID: **106** Operating Status: **Operating**
 Description: **HEATING PLANT** Operating Status Year: **2017**
GENERATOR #2
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **2.7 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			24	

Process

Process ID: **106-1** Description: **Distillate Fuel**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.10073	0.05508	0.0781	0.12252	0.04949	0.05195	0.04703	0.03134	0.07097	0.1233	0.29339	0.15345	0.02411

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	4.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.07155
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	6.93E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.3324
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0234
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0234

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	1.2E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0271
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	12.54
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	5.09E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	9.9E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	5.78E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	6.99E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	8.31E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	7.04E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	3.62E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	8.31E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	1.2E-7
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	1.46E-11
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	8.92E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	5.94E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	2.27E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	3.5E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	1.3E-5

Control Approaches for HEATING PLANT GENERATOR #2

Control Approaches Not Reported

Exhaust Point Apportionments for HEATING PLANT GENERATOR #2

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087106004

100.0

Emissions Unit

Unit ID: **021** Operating Status: **Permanently Shutdown**
 Description: **HUBBARD HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.3 E6BTU/HR**
 Comment: **Removed from Bowdoin**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **021-1** Description: **#2 FUEL OIL / DIESEL**
 Comment: **Removed from Bowdoin**
 SCC Code: **20300101** Material Code:
 Material IO Code: Material UOM Code:
 % Ash Content: % Sulfur Content:
 Operating Status: Not Operational

Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Throughput Not Reported.												

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	

VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP		
107028	Acrolein	HAP		
7440382	Arsenic	HAP		
71432	Benzene	HAP		
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Control Approaches for HUBBARD HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for HUBBARD HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH004	DIESEL GENERATOR STACKS	2300500087021004	100.0	

Emissions Unit

Unit ID: **029** Operating Status: **Operating**
 Description: **KANBAR HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **0.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **029-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.017397	0.001757	0.002273	0.0016	0.001692	0.000856	0.000904	0.001074	0.001375	0.001389	0.001414	0.001258	0.001805

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.3E-6
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.002812
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.3E-9
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.0362
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	8.794E-5

Comment: Based on license, which uses AP-42 factor

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	8.794E-5
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	5.0E-6
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.001047
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	1.0357
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	1.95E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.0E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	3.58E-7
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	5.7E-8
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.7E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	1.08E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	6.2E-8
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	1.19E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	7.3E-10
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	6.37E-6
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	7.2E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.3E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	1.03E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	5.82E-9

Control Approaches for KANBAR HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for KANBAR HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087029101	100.0	

Emissions Unit

Unit ID: **028** Operating Status: **Operating**
 Description: **MACMILLAN HOUSE** Operating Status Year: **2017**
BOILER
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.4 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **028-2** Description: **Biodiesel**
 Comment:
 SCC Code: **10301301** Material Code: **Liquid Waste**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

<u>Pollutant Code</u>	<u>Pollutant Description</u>	<u>Type</u>	<u>Method</u>	<u>Emission Factor</u>	<u>Process Emissions Tons/Yr</u>
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP			
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP			
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP			
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP			
SO2	Sulfur Dioxide	CAP			
VOC	Volatile Organic Compounds	CAP			

124389	Carbon Dioxide	GHG
74828	Methane	GHG
10024972	Nitrous Oxide	GHG
75070	Acetaldehyde	HAP
107028	Acrolein	HAP
7440382	Arsenic	HAP
71432	Benzene	HAP
7440439	Cadmium	HAP
7440473	Chromium	HAP
7440484	Cobalt	HAP
600	Dioxin & Dioxin-like Compounds	HAP
50000	Formaldehyde	HAP
7439965	Manganese	HAP
7439976	Mercury	HAP
7440020	Nickel	HAP
246	Polycyclic Organic Matter	HAP

Process

Process ID: **028-1** Description: **Natural Gas**
Comment:
SCC Code: **10300603** Material Code: **Natural Gas**
Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
% Ash Content: % Sulfur Content:
Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.2553	0.1268	0.164	0.1155	0.1221	0.0617	0.0652	0.0775	0.0992	0.1002	0.1021	0.0908	0.1302

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	3.1E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0527
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	3.1E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.06277

PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	51.5 LB/E6FT3	0.0323
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0012
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	4.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0035
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	74.732
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00141
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.4E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	9.85E-6
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.17E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.3E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.3E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	6.9E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	8.79E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	5.3E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	4.7E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	2.4E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	1.6E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.3E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	4.2E-7

Control Approaches for MACMILLAN HOUSE BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for MACMILLAN HOUSE BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH002	DISTILLATE BOILER STACKS	2300500087028002	100.0	

Exhaust Point Apportionments for MACMILLAN HOUSE BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH002	DISTILLATE BOILER STACKS	2300500087028002	100.0	

Emissions Unit

Unit ID: **022** Operating Status: **Operating**
 Description: **MEMORIAL HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.8 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **022-1** Description: **#2 FUEL OIL / DIESEL**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.74132	0.0371	0.0526	0.08251	0.03333	0.03499	0.03167	0.02111	0.0478	0.08304	0.19759	0.10334	0.01624

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	3.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.04819
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	4.67E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.2239
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0158
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0158

SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	7.8E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0183
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	8.444
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	3.42E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	6.7E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	3.89E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	4.71E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	5.6E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	4.74E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	2.44E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	5.6E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	7.8E-8
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	9.82E-12
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	6.0E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	4.0E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	1.53E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	2.3E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	8.5E-6

Control Approaches for MEMORIAL HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for MEMORIAL HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087022004

100.0

Emissions Unit

Unit ID: **098** Operating Status: **Operating**
 Description: **MOULTON UNION** Operating Status Year: **2017**
(OUTSIDE) GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **2.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **098-1** Description: **#2 Fuel Oil / Diesel**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.07263	0.05368	0.07611	0.1194	0.04822	0.05062	0.04583	0.03054	0.06916	0.12015	0.2859	0.14953	0.02349

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	4.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.06972
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	6.76E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.3239
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0228
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0228

SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	1.1E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0264
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	12.22
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	4.96E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	9.7E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	5.63E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	6.81E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	8.1E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	6.86E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	3.53E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	8.1E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	1.1E-7
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	1.42E-11
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	8.69E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	5.79E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	2.21E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	3.4E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	1.2E-5

Control Approaches for MOULTON UNION (OUTSIDE) GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for MOULTON UNION (OUTSIDE) GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087098004

100.0

Emissions Unit

Unit ID: **104** Operating Status: **Operating**
 Description: **Moulton Union Boiler (new)** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **104-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.5201	0.1535	0.1986	0.1398	0.1479	0.0748	0.079	0.0939	0.1201	0.1213	0.1236	0.1099	0.1577

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	3.7E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0638
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	3.8E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.07601
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	51.5 LB/E6FT3	0.0391
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0014

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	5.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0042
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	90.497
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.0017
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.7E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.19E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.41E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.5E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.6E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	8.4E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.06E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	6.4E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	5.7E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	2.9E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.0E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.6E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	5.08E-7

Control Approaches for Moulton Union Boiler (new)

Control Approaches Not Reported

Exhaust Point Apportionments for Moulton Union Boiler (new)

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087104003

100.0

Emissions Unit

Unit ID: **024** Operating Status: **Operating**
 Description: **MOULTON UNION** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.8 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **024-1** Description: **Natural Gas**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.052552	0.005309	0.006865	0.004834	0.005112	0.002584	0.002731	0.003245	0.004154	0.004195	0.004272	0.003799	0.005452

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	1.3E-5
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.008495
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.3E-8
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.10935
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.657E-4

Comment: Based on license, which uses AP-42 factor

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.657E-4
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	2.0E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.0031626
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	3.1286
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	5.89E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	6.0E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	1.08E-6
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	1.7E-7
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	5.3E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	3.26E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	1.9E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	3.6E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	2.2E-9
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	1.92E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	2.2E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	6.8E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	3.1E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	1.76E-8

Control Approaches for MOULTON UNION GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for MOULTON UNION GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087024101	100.0	

Emissions Unit

Unit ID: **027** Operating Status: **Temporarily Shutdown**
 Description: **PORTABLE 1 GENERATOR** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.0 E6BTU/HR**
 Comment: **Not used in 2017**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **027-1** Description: **#2 FUEL OIL / DIESEL**
 Comment: **Not used in 2017**
 SCC Code: **20300101** Material Code:
 Material IO Code: Material UOM Code:
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Throughput Not Reported.												

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	
VOC	Volatile Organic	CAP	EPA Emission Factor (no	49.3 LB/E3GAL	

	Compounds	Control Efficiency used)
124389	Carbon Dioxide	GHG
74828	Methane	GHG
10024972	Nitrous Oxide	GHG
75070	Acetaldehyde	HAP
107028	Acrolein	HAP
7440382	Arsenic	HAP
71432	Benzene	HAP
7440439	Cadmium	HAP
7440473	Chromium	HAP
7440484	Cobalt	HAP
600	Dioxin & Dioxin-like Compounds	HAP
50000	Formaldehyde	HAP
7439965	Manganese	HAP
7439976	Mercury	HAP
7440020	Nickel	HAP
246	Polycyclic Organic Matter	HAP

Control Approaches for PORTABLE 1 GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for PORTABLE 1 GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH004	DIESEL GENERATOR STACKS	2300500087027004	100.0	

Emissions Unit

Unit ID: **099** Operating Status: **Temporarily Shutdown**
 Description: **PORTABLE 2 GENERATOR** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **3.1 E6BTU/HR**
 Comment: **Not used in 2017**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **099-1** Description: **#2 Fuel Oil / Diesel**
 Comment: **Not used in 2017**
 SCC Code: **20300101** Material Code:
 Material IO Code: Material UOM Code:
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Throughput Not Reported.												

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP			
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	16.44 LB/E3GAL	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	16.44 LB/E3GAL	
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no	0.21 LB/E3GAL	

VOC	Volatile Organic Compounds	CAP	Control Efficiency used)	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL
124389	Carbon Dioxide	GHG			
74828	Methane	GHG			
10024972	Nitrous Oxide	GHG			
75070	Acetaldehyde	HAP			
107028	Acrolein	HAP			
7440382	Arsenic	HAP			
71432	Benzene	HAP			
7440439	Cadmium	HAP			
7440473	Chromium	HAP			
7440484	Cobalt	HAP			
600	Dioxin & Dioxin-like Compounds	HAP			
50000	Formaldehyde	HAP			
7439965	Manganese	HAP			
7439976	Mercury	HAP			
7440020	Nickel	HAP			
246	Polycyclic Organic Matter	HAP			

Control Approaches for PORTABLE 2 GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for PORTABLE 2 GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH004	DIESEL GENERATOR STACKS	2300500087099004	100.0	

Emissions Unit

Unit ID: **033** Operating Status: **Permanently Shutdown**
 Description: **RHODES HALL** Operating Status Year: **2017**
GENERATOR 1
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.1 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	

Process

Process ID: **033-1** Description: **PROPANE**
 Comment:
 SCC Code: **20301001** Material Code:
 Material IO Code: Material UOM Code:
 % Ash Content: % Sulfur Content:
 Operating Status: Not Operational

Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Throughput Not Reported.												

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	
CO	Carbon Monoxide	CAP	Site-Specific Emission Factor (no Control Efficiency used)	89.3 LB/E3GAL	
7439921	Lead	CAP			
NOX	Nitrogen Oxides	CAP	Site-Specific Emission Factor (no Control Efficiency used)	414.54 LB/E3GAL	
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Site-Specific Emission Factor (no Control Efficiency used)	11.28 LB/E3GAL	

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	Site-Specific Emission Factor (no Control Efficiency used)	11.28 LB/E3GAL
SO2	Sulfur Dioxide	CAP		
VOC	Volatile Organic Compounds	CAP	Site-Specific Emission Factor (no Control Efficiency used)	33.84 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP		
107028	Acrolein	HAP		
7440382	Arsenic	HAP		
71432	Benzene	HAP		
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Control Approaches for RHODES HALL GENERATOR 1

Control Approaches Not Reported

Exhaust Point Apportionments for RHODES HALL GENERATOR 1

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH102	PROPANE GENERATOR STACKS	2300500087033102	100.0	

Emissions Unit

Unit ID: **105** Operating Status: **Operating**
 Description: **Rhodes Hall Generator 2** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.4 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **105-1** Description: **Natural Gas**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.041951	0.004238	0.00548	0.003859	0.004081	0.002063	0.00218	0.002591	0.003316	0.003348	0.00341	0.003033	0.004352

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	1.0E-5
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.006781
7439921	Lead	CAP	Other Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.0E-8
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.087292
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.121E-4
<i>Comment: Based on license, which uses AP-42 factor</i>					
PM25-FIL	Particulate Matter, 2.5	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.121E-4

	microns, filterable		Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	1.0E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.0025246
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	2.4975
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	4.7E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	4.8E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	8.64E-7
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	1.4E-7
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	4.2E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	2.6E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	1.5E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	2.87E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	1.8E-9
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	1.54E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	1.7E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	5.5E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	2.48E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	1.4E-8

Control Approaches for Rhodes Hall Generator 2

Control Approaches Not Reported

Exhaust Point Apportionments for Rhodes Hall Generator 2

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087105101	100.0	

Emissions Unit

Unit ID: **009** Operating Status: **Removed from License (Equipment Only)**
 Description: **SMITH UNION BOILER** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **2.4 E6BTU/HR**
 Comment: **This boiler was removed in 2016**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			0	0

Process

Process ID: **009-1** Description: **PROPANE**
 Comment: **This boiler was removed in 2016**
 SCC Code: **10301002** Material Code: **Propane**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Not Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0	0	0	0	0	0	0	0

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Other Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	
CO	Carbon Monoxide	CAP	Trade Group Emission Factor (no Control Efficiency used)	7.5 LB/E3GAL	
7439921	Lead	CAP	Trade Group Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	
NOX	Nitrogen Oxides	CAP	Trade Group Emission Factor (no Control Efficiency used)	13.0 LB/E3GAL	
PM10-FIL	Particulate Matter, 10	CAP	State/Local Emission	7.52 LB/E3GAL	

	microns, filterable		Factor (no Control Efficiency used)	
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	0.2 LB/E3GAL
SO2	Sulfur Dioxide	CAP		
VOC	Volatile Organic Compounds	CAP	Trade Group Emission Factor (no Control Efficiency used)	1.0 LB/E3GAL
124389	Carbon Dioxide	GHG		
74828	Methane	GHG		
10024972	Nitrous Oxide	GHG		
75070	Acetaldehyde	HAP		
107028	Acrolein	HAP		
7440382	Arsenic	HAP		
71432	Benzene	HAP		
7440439	Cadmium	HAP		
7440473	Chromium	HAP		
7440484	Cobalt	HAP		
600	Dioxin & Dioxin-like Compounds	HAP		
50000	Formaldehyde	HAP		
7439965	Manganese	HAP		
7439976	Mercury	HAP		
7440020	Nickel	HAP		
246	Polycyclic Organic Matter	HAP		

Control Approaches for SMITH UNION BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for SMITH UNION BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH100	PROPANE BOILER STACK	2300500087009100	100.0	

Emissions Unit

Unit ID: **025** Operating Status: **Operating**
 Description: **SMITH UNION** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **0.7 E6BTU/HR**
 Comment: **Switched to natural gas. Design capacity on natural gas is 0.56 MMBtu/hr.**

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **025-1** Description: **PROPANE**
 Comment: **Switched to natural gas and needs an updated SCC**
 SCC Code: **20301001** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.01649	0.001666	0.002154	0.001517	0.001604	0.000811	0.000857	0.001018	0.001303	0.001316	0.001341	0.001192	0.001711

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.0E-6
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.34 LB/E6FT3	0.002666
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.0E-9
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.03431
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	8.336E-5
<i>Comment: Based on license, which uses AP-42 factor</i>					
PM25-FIL	Particulate Matter, 2.5	CAP	EPA Emission Factor (no	10.11 LB/E6FT3	8.336E-5

	microns, filterable		Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	5.0E-6
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	9.924E-4
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	0.9817
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	1.85E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.9E-6
75070	Acetaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	3.4E-7
107028	Acrolein	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	5.4E-8
7440382	Arsenic	HAP	State/Local Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.6E-9
71432	Benzene	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	1.02E-7
7440439	Cadmium	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	5.9E-8
7440473	Chromium	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	1.13E-7
7440484	Cobalt	HAP	State/Local Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	6.9E-10
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	State/Local Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	6.04E-6
7439965	Manganese	HAP	State/Local Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	6.8E-7
7439976	Mercury	HAP	State/Local Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.1E-9
7440020	Nickel	HAP	State/Local Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	9.73E-7
246	Polycyclic Organic Matter	HAP	State/Local Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	5.52E-9

Control Approaches for SMITH UNION GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for SMITH UNION GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH102	PROPANE GENERATOR STACKS	2300500087025102	100.0	

Emissions Unit

Unit ID: **092** Operating Status: **Operating**
 Description: **STOWE HALL BOILER** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **092-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.9753	0.0985	0.1274	0.0897	0.0949	0.048	0.0507	0.0602	0.0771	0.0778	0.0793	0.0705	0.1012

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	2.4E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.041
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	2.4E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.04877
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0402
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	9.3E-4
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no	0.6 LB/E6FT3	3.0E-4

			Control Efficiency used)		
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0027
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	58.06
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00109
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.1E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	7.66E-6
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	9.07E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	9.8E-8
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	5.4E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	6.83E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	4.1E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	3.7E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	1.9E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	1.3E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	3.26E-7

Control Approaches for STOWE HALL BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for STOWE HALL BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH003	NATURAL GAS BOILER	2300500087092003	100.0	

Emissions Unit

Unit ID: **031** Operating Status: **Operating**
 Description: **STOWE HALL** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **0.9 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **031-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.028025	0.002831	0.003661	0.002578	0.002726	0.001378	0.001456	0.001731	0.002215	0.002237	0.002278	0.002026	0.002908

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	6.9E-6
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.00453
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	7.0E-9
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.058314
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	1.417E-4

Comment: Based on license, which uses AP-42 factor

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	1.417E-4
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	8.0E-6
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.0016865
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	1.6684
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	3.14E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	3.2E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	5.77E-7
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	9.2E-8
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.8E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	1.74E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	9.9E-8
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	1.92E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	1.2E-9
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	1.03E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	1.2E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	3.6E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	1.65E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	9.37E-9

Control Approaches for STOWE HALL GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for STOWE HALL GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087031101	100.0	

Emissions Unit

Unit ID: **026** Operating Status: **Operating**
 Description: **THORN DINING** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **4.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **026-1** Description: **#2 FUEL OIL / DIESEL**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.63423	0.08178	0.11596	0.18191	0.07347	0.07713	0.06982	0.04653	0.10537	0.18306	0.43559	0.22782	0.03579

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	7.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.1062
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	1.03E-6
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.4935
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	State/Local Emission Factor (no Control Efficiency used)	16.44 LB/E3GAL	0.01343
PM25-FIL	Particulate Matter, 2.5	CAP	State/Local Emission	16.44 LB/E3GAL	0.01343

	microns, filterable		Factor (no Control Efficiency used)		
SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	1.7E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0403
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	18.61
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	7.55E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	1.5E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	8.58E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	1.04E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	1.23E-6
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	1.05E-4
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	5.38E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	1.23E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	1.7E-7
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	2.17E-11
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	1.32E-4
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	8.82E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	3.37E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	5.1E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	1.9E-5

Control Approaches for THORN DINING GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for THORN DINING GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH004	DIESEL GENERATOR STACKS	2300500087026004	100.0	

Emissions Unit

Unit ID: **017** Operating Status: **Operating**
 Description: **THORN HALL BOILER** Operating Status Year: **2017**
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **3.2 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **017-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
3.0934	0.3125	0.4041	0.2845	0.3009	0.1521	0.1608	0.191	0.2445	0.2469	0.2515	0.2237	0.3209

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	7.6E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.13
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	7.7E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.1547
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.127
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0029
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no	0.6 LB/E6FT3	9.0E-4

			Control Efficiency used)		
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0085
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	184.16
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00346
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	3.6E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	2.43E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	2.88E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	3.1E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	3.2E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	1.7E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	2.17E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	1.3E-7
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	1.2E-4
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	5.9E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	4.0E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	3.2E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	1.03E-6

Control Approaches for THORN HALL BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for THORN HALL BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH003	NATURAL GAS BOILER	2300500087017003	100.0	

Emissions Unit

Unit ID: **032** Operating Status: **Operating**
 Description: **WALKER ART MUSEUM** Operating Status Year: **2017**
GENERATOR
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.8 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **032-1** Description: **NATURAL GAS**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.052552	0.005309	0.006865	0.004834	0.005112	0.002584	0.002731	0.003245	0.004154	0.004195	0.004272	0.003799	0.005452

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	1.3E-5
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.008495
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	1.3E-8
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.10935
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.657E-4

Comment: Based on license, which uses AP-42 factor

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	2.657E-4
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	2.0E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.0031626
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	3.1286
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	5.89E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	6.0E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	1.08E-6
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	1.7E-7
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	5.3E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	3.26E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	1.9E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	3.6E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	2.2E-9
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	1.92E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	2.2E-6
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	6.8E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	3.1E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	1.76E-8

Control Approaches for WALKER ART MUSEUM GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for WALKER ART MUSEUM GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087032101	100.0	

Emissions Unit

Unit ID: **093** Operating Status: **Operating**
 Description: **WATSON ICE ARENA** Operating Status Year: **2017**
BOILER 1
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **2.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **093-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.9506	0.197	0.2548	0.1794	0.1897	0.0959	0.1014	0.1205	0.1542	0.1557	0.1586	0.141	0.2024

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.8E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0819
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.9E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.09753
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0804
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0019

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	6.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0054
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	116.13
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00218
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.2E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.53E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.81E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.0E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	1.1E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.37E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	8.2E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	7.3E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	3.7E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.5E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	6.52E-7

Control Approaches for WATSON ICE ARENA BOILER 1

Control Approaches Not Reported

Exhaust Point Apportionments for WATSON ICE ARENA BOILER 1

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087093003

100.0

Emissions Unit

Unit ID: **094** Operating Status: **Operating**
 Description: **WATSON ICE ARENA** Operating Status Year: **2017**
BOILER 2
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **2.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **094-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.9506	0.197	0.2548	0.1794	0.1897	0.0959	0.1014	0.1205	0.1542	0.1557	0.1586	0.141	0.2024

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.8E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0819
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.9E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.09753
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0804
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0019

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	6.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0054
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	116.13
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00218
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.2E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.53E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.81E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.0E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	1.1E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.37E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	8.2E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	7.3E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	3.7E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.5E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	6.52E-7

Control Approaches for WATSON ICE ARENA BOILER 2

Control Approaches Not Reported

Exhaust Point Apportionments for WATSON ICE ARENA BOILER 2

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087094003

100.0

Emissions Unit

Unit ID: **095** Operating Status: **Operating**
 Description: **WATSON ICE ARENA** Operating Status Year: **2017**
BOILER 3
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **2.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **095-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.9506	0.197	0.2548	0.1794	0.1897	0.0959	0.1014	0.1205	0.1542	0.1557	0.1586	0.141	0.2024

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.8E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0819
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.9E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.09753
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0804
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0019

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	6.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0054
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	116.13
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00218
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.2E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.53E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.81E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.0E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	1.1E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.37E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	8.2E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	7.3E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	3.7E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.5E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	6.52E-7

Control Approaches for WATSON ICE ARENA BOILER 3

Control Approaches Not Reported

Exhaust Point Apportionments for WATSON ICE ARENA BOILER 3

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087095003

100.0

Emissions Unit

Unit ID: **096** Operating Status: **Operating**
 Description: **WATSON ICE ARENA** Operating Status Year: **2017**
BOILER 4
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **1.5 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **096-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.4629	0.1478	0.1911	0.1346	0.1423	0.0719	0.076	0.0903	0.1156	0.1168	0.1189	0.1058	0.1518

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	3.6E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0614
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	3.7E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.07315
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0603
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0014

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	4.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.004
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	87.092
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00164
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	1.7E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.15E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.36E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	1.5E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.5E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	8.0E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.02E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	6.1E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	5.5E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	2.8E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	1.9E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	1.5E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	4.89E-7

Control Approaches for WATSON ICE ARENA BOILER 4

Control Approaches Not Reported

Exhaust Point Apportionments for WATSON ICE ARENA BOILER 4

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087096003

100.0

Emissions Unit

Unit ID: **100** Operating Status: **Operating**
 Description: **WATSON ICE ARENA GENERATOR** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **1.6 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **100-1** Description: **#2 Fuel Oil / Diesel**
 Comment:
 SCC Code: **20300101** Material Code: **Distillate Oil - Diesel**
 Material IO Code: **I (Burned)** Material UOM Code: **Thousands of Gallons**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.6402	0.03204	0.04543	0.07126	0.02878	0.03021	0.02735	0.01823	0.04128	0.07171	0.17064	0.08925	0.01402

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.8 LB/E3GAL	3.0E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	130.0 LB/E3GAL	0.04161
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	0.00126 LB/E3GAL	4.03E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	604.0 LB/E3GAL	0.1933
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0136
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	42.5 LB/E3GAL	0.0136

SO2	Sulfur Dioxide	CAP	Other Emission Factor (no Control Efficiency used)	0.21 LB/E3GAL	6.7E-5
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	49.3 LB/E3GAL	0.0158
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	22780.0 LB/E3GAL	7.292
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	0.924 LB/E3GAL	2.96E-4
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.18 LB/E3GAL	5.8E-5
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.105 LB/E3GAL	3.36E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0127 LB/E3GAL	4.07E-6
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	4.83E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.128 LB/E3GAL	4.1E-5
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	6.58E-4 LB/E3GAL	2.11E-7
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.00151 LB/E3GAL	4.83E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	2.1E-4 LB/E3GAL	6.7E-8
600	Dioxin & Dioxin-like Compounds	HAP	Trade Group Emission Factor (no Control Efficiency used)	2.65E-8 LB/E3GAL	8.48E-12
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.162 LB/E3GAL	5.19E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.108 LB/E3GAL	3.46E-5
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	4.13E-5 LB/E3GAL	1.32E-8
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	6.3E-4 LB/E3GAL	2.0E-7
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	0.023 LB/E3GAL	7.4E-6

Control Approaches for WATSON ICE ARENA GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for WATSON ICE ARENA GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH004

DIESEL GENERATOR
STACKS

2300500087100004

100.0

Emissions Unit

Unit ID: **097** Operating Status: **Operating**
 Description: **WELLNESS CENTER** Operating Status Year: **2017**
BOILER
 Unit Type/Desc: **100 Boiler**
 Design Capacity: **2.0 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			8760	

Process

Process ID: **097-1** Description: **Natural Gas**
 Comment:
 SCC Code: **10300603** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1.9506	0.197	0.2548	0.1794	0.1897	0.0959	0.1014	0.1205	0.1542	0.1557	0.1586	0.141	0.2024

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	EPA Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	4.8E-4
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	84.0 LB/E6FT3	0.0819
7439921	Lead	CAP	EPA Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	4.9E-7
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	100.0 LB/E6FT3	0.09753
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	Other Emission Factor (no Control Efficiency used)	82.4 LB/E6FT3	0.0804
PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	1.9 LB/E6FT3	0.0019

SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	6.0E-4
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	5.5 LB/E6FT3	0.0054
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	116.13
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	0.00218
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.2E-4
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0157 LB/E6FT3	1.53E-5
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0186 LB/E6FT3	1.81E-5
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.0E-7
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0011 LB/E6FT3	1.1E-6
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0014 LB/E6FT3	1.37E-6
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	8.2E-8
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.075 LB/E6FT3	7.3E-5
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	3.8E-4 LB/E6FT3	3.7E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	2.5E-7
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.0021 LB/E6FT3	2.0E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	6.52E-7

Control Approaches for WELLNESS CENTER BOILER

Control Approaches Not Reported

Exhaust Point Apportionments for WELLNESS CENTER BOILER

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
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EXH003

NATURAL GAS BOILER
STACKS

2300500087097003

100.0

Emissions Unit

Unit ID: **101** Operating Status: **Operating**
 Description: **WELLNESS CENTER GENERATOR** Operating Status Year: **2017**
 Unit Type/Desc: **160 Reciprocating IC Engine**
 Design Capacity: **0.8 E6BTU/HR**
 Comment:

2017 Operating Details				
Hours Per Day	Days Per Week	Weeks Per Year	Hours Per Year	Summer Operating Days
			12	

Process

Process ID: **101-1** Description: **Natural Gas**
 Comment:
 SCC Code: **20300201** Material Code: **Natural Gas**
 Material IO Code: **I (Burned)** Material UOM Code: **Millions of Cubic Feet**
 % Ash Content: % Sulfur Content:
 Operating Status: **Operational**

2017 Throughput												
Annual	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.023829	0.002407	0.003113	0.002192	0.002318	0.001172	0.001238	0.001472	0.001883	0.001902	0.001937	0.001723	0.002472

Emissions

Pollutant Code	Pollutant Description	Type	Method	Emission Factor	Process Emissions Tons/Yr
NH3	Ammonia	CAP	Site-Specific Emission Factor (no Control Efficiency used)	0.49 LB/E6FT3	5.8E-6
CO	Carbon Monoxide	CAP	EPA Emission Factor (no Control Efficiency used)	323.3 LB/E6FT3	0.003852
7439921	Lead	CAP	State/Local Emission Factor (no Control Efficiency used)	5.0E-4 LB/E6FT3	6.0E-9
NOX	Nitrogen Oxides	CAP	EPA Emission Factor (no Control Efficiency used)	4161.6 LB/E6FT3	0.049583
PM10-FIL	Particulate Matter, 10 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	1.205E-4

Comment: Based on license, which uses AP-42 factor

PM25-FIL	Particulate Matter, 2.5 microns, filterable	CAP	EPA Emission Factor (no Control Efficiency used)	10.11 LB/E6FT3	1.205E-4
SO2	Sulfur Dioxide	CAP	EPA Emission Factor (no Control Efficiency used)	0.6 LB/E6FT3	7.0E-6
VOC	Volatile Organic Compounds	CAP	EPA Emission Factor (no Control Efficiency used)	120.36 LB/E6FT3	0.001434
124389	Carbon Dioxide	GHG	EPA Emission Factor (no Control Efficiency used)	119067.0 LB/E6FT3	1.4186
74828	Methane	GHG	EPA Emission Factor (no Control Efficiency used)	2.24 LB/E6FT3	2.67E-5
10024972	Nitrous Oxide	GHG	EPA Emission Factor (no Control Efficiency used)	0.23 LB/E6FT3	2.7E-6
75070	Acetaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.0412 LB/E6FT3	4.91E-7
107028	Acrolein	HAP	EPA Emission Factor (no Control Efficiency used)	0.0066 LB/E6FT3	7.9E-8
7440382	Arsenic	HAP	EPA Emission Factor (no Control Efficiency used)	2.0E-4 LB/E6FT3	2.4E-9
71432	Benzene	HAP	EPA Emission Factor (no Control Efficiency used)	0.0124 LB/E6FT3	1.48E-7
7440439	Cadmium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0071 LB/E6FT3	8.5E-8
7440473	Chromium	HAP	EPA Emission Factor (no Control Efficiency used)	0.0137 LB/E6FT3	1.63E-7
7440484	Cobalt	HAP	EPA Emission Factor (no Control Efficiency used)	8.4E-5 LB/E6FT3	1.0E-9
600	Dioxin & Dioxin-like Compounds	HAP	State/Local Emission Factor (no Control Efficiency used)	0.0 LB/E6FT3	0.0
50000	Formaldehyde	HAP	EPA Emission Factor (no Control Efficiency used)	0.732 LB/E6FT3	8.72E-6
7439965	Manganese	HAP	EPA Emission Factor (no Control Efficiency used)	0.083 LB/E6FT3	9.9E-7
7439976	Mercury	HAP	EPA Emission Factor (no Control Efficiency used)	2.6E-4 LB/E6FT3	3.1E-9
7440020	Nickel	HAP	EPA Emission Factor (no Control Efficiency used)	0.118 LB/E6FT3	1.41E-6
246	Polycyclic Organic Matter	HAP	EPA Emission Factor (no Control Efficiency used)	6.69E-4 LB/E6FT3	7.97E-9

Control Approaches for WELLNESS CENTER GENERATOR

Control Approaches Not Reported

Exhaust Point Apportionments for WELLNESS CENTER GENERATOR

<u>Exhaust Point ID</u>	<u>Exhaust Point Desc</u>	<u>Apportionment ID</u>	<u>Avg % Emissions</u>	<u>Comment</u>
EXH101	NATURAL GAS GENERATOR STACKS	2300500087101101	100.0	

Completeness Report

Inventory Item	Check Number	Check Name	Description	Error Level	Justification
Process: GREENHOUSE GASES	957	Comment Requested for Certain Emissions Calculation Methods	A facility is encouraged to provide supporting documentation for emissions values that they supplied without emissions factors.	Warning	

Facility Emissions

<u>CAS NO.</u>	<u>Pollutant Description</u>	<u>Tons/Yr</u>
	Volatile Organic Compounds	0.5712185
	Sulfur Dioxide	1.232281
	Particulate Matter, 2.5 microns, filterable	0.26776013
	Particulate Matter, 10 microns, filterable	5.85630013
	Nitrogen Oxides	9.908446
7664-41-7	Ammonia	0.0478415
	Carbon Monoxide	6.352779
811-92-2	1,1,1,2-Tetrafluoroethane (structure: CH ₂ FCF ₃) (HFC-134a / R-134a)	0.00288
75-07-0	Acetaldehyde	0.00143724
74-82-8	Methane	0.1735415
7440-48-4	Cobalt	1.008459E-5
7440-47-3	Chromium	1.11334E-4
7440-43-9	Cadmium	8.6024E-5
7440-38-2	Arsenic	2.83501E-5
7440-02-0	Nickel	1.68793E-4
7439-97-6	Mercury	2.52501E-5
7439-96-5	Manganese	4.1081E-4
7439-92-1	Lead	5.99019E-5
71-43-2	Benzene	5.73158E-4
	Dioxin & Dioxin-like Compounds	5.3711E-10
50-00-0	Formaldehyde	0.00636057
420-46-2	1,1,1-Trifluoroethane (HFC-143a / R-143a)	0.01144
354-33-6	Pentafluoroethane (HFC-125, R-125)	0.00968
	Polycyclic Organic Matter	1.7929304E-4
124-38-9	Carbon Dioxide	8689.3559
107-02-8	Acrolein	0.001326323
10024-97-2	Nitrous Oxide	0.0195637